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LIABILITY OF HEALTH DEPARTMENT.

JUDICIAL DECISION HOLDING THAT A MUNICIPALITY IS NOT LIABLE FOR THE NEGLIGENCE OF ITS HEALTH AUTHORITIES IN THE MAINTENANCE OF AN ISOLATION HOSPITAL.

The Supreme Court of Kansas has decided that a city is not liable in damages for injury resulting from the negligence or misfeasance of officers or employees of the city health department while enforcing laws or ordinances for the protection of the public health.

A patient in a city isolation hospital suffered from blood poisoning as a result of getting into his foot a splinter from the floor. He alleged that the city was negligent in maintaining the floor in a defective condition, but the court said that "the duty of a municipal corporation to conserve the public health is governmental, and it is not liable for injuries inflicted while performing such duty."

The opinion is published in this issue of the Public Health Reports, page 1875.

POLIOMYELITIS (INFANTILE PARALYSIS).

WHAT IS KNOWN OF ITS CAUSE AND MODES OF TRANSMISSION.

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In view of the present outbreak of infantile paralysis (poliomyelitis) in New York City the following discussion of the etiology and epidemiology of this disease is taken from Hygienic Laboratory Bulletin No. 90, with some revision by the author. This discussion, based on an extensive review of the literature and on the author's personal studies of the epidemics previously reported, is presented as a summary of the present knowledge concerning the cause and transmission of poliomyelitis, with such opinions as seem justified by the facts.

Means of Transmission.

The essential facts brought out by the experimental studies of poliomyelitis are the following:

The specific cause of poliomyelitis is a minute microorganism, a so-called virus, capable of cultivation in vitro on suitable media.

The virus derived from human cases is pathogenic for apes, producing in them characteristic effects essentially similar to those produced in man. As is the case with many other pathogenic organisms, considerable variations in virulence are noted.

The only animals other than apes which have been found definitely susceptible to the infection are rabbits. The susceptibility of these animals to the infection appears highly inconstant, and the effects produced are both clinically and anatomically quite different from those produced in monkeys. Römer has found guinea pigs susceptible to an infectious paralytic disease strikingly similar to poliomyelitis, and Neustaedter has recently made observations suggesting that the guinea pig may at times be susceptible to poliomyelitis.

Sources of the Virus.

In the human body the virus has been found: (a) *In the tissues and secretions of persons dead of poliomyelitis*, namely, in the brain, the spinal cord, the mesenteric glands, the tonsils, and in the mucous secretions of the naso-pharynx, the trachea, and the intestines, (b) *In the secretions of persons acutely ill with poliomyelitis*, namely, in the naso-pharyngeal secretions and in washings from the rectum.

The infectivity of these secretions has been demonstrated not only in persons suffering from the clinically typical paralytic forms of poliomyelitis, but also, though less conclusively, in the secretions of those suffering from mild, clinically indefinite, abortive forms.

(c) *In the naso-pharyngeal and intestinal secretions of persons convalescent from acute attacks of poliomyelitis*. Although the total number of recorded examinations of convalescents is as yet small, the results of studies by Kling, Wernstedt, and Petterson suggest that in a very large proportion of persons recovering from poliomyelitis these secretions remain infective for several weeks or even months.

(d) *In the naso-pharyngeal secretions of apparently well persons* who have been more or less intimately associated with other persons suffering from poliomyelitis, chiefly in epidemic foci. No figures are available as yet to form an estimate of the proportion of persons who, upon exposure to infection with poliomyelitis, become "carriers," or of the relative proportions of carriers and clinically recognizable cases of poliomyelitis in an epidemic focus. The technical difficulties in the way of demonstrating the virus, involving the injection of filtrates into monkeys, are such that extensive statistics upon this point can hardly be expected in the near future, unless the technique of the demonstration can be greatly simplified.

Outside of the human body the living virus has been demonstrated in nature only in the dust of rooms occupied by poliomyelitis patients and presumably contaminated with their secretions, and pos-

sibly (though the demonstration is not fully convincing) upon articles recently handled by persons suffering from poliomyelitis.

In brief, there is at present experimental proof of the following sources of infection: *The secretions of persons ill with poliomyelitis, those convalescent from the infection, and "passive carriers"—that is, persons apparently well who are harboring the specific virus and discharging it in their secretions.*

Avenues and Vehicles of Infection.

As to the avenues through which the virus may enter the human body to cause infection, inferences may be drawn chiefly from experiments upon lower animals. Monkeys may be experimentally infected by injection of the virus directly into the brain, or the subdural space, into the general circulation, the peritoneal cavity, or even the subcutaneous tissue. They may also be infected by *rubbing the virus* upon the scarified mucous membrane of the nose, and even by rubbing it *upon the uninjured mucous membrane*. Also, by the use of massive doses of the virus and under quite artificial conditions, it has been found possible to produce infection by feeding monkeys through a stomach tube.

Of the various methods of infection experimentally shown to be possible, infection through the nasal mucosa appears to be the most constant under conditions which might be expected to be approximated in nature.

Concerning the natural vehicles of infection, experiments performed under laboratory conditions are necessarily somewhat inconclusive. The infectiousness of the nasopharyngeal and intestinal secretions of infected persons and the susceptibility of monkeys to infection through the nasal mucosa indicate very strongly that the disease may be transmitted in nature by such vehicles as may serve to transmit these secretions from infected persons to the respiratory (or digestive) tracts of others—that is, by more or less direct personal contact. The resistance of the virus to the influence of drying and sunlight suggests the probability of the infective agent being conveyed in dust and in fomites, a suggestion strengthened by the experimental evidence of the infectivity of dust from the sick room.

Experiments showing the possibility of transmitting the infection from monkey to monkey through the agency of a biting fly, *Stomoxys calcitrans*, and in one instance through the bedbug, have added considerable weight to the hypothesis that poliomyelitis is in nature an insect-borne disease. However, since the transmission of the disease through these insects has proven possible in only isolated instances and under highly artificial conditions, these experiments do not warrant the conclusion that stomoxys or other insects play any important part in the natural dissemination of the disease in man.

On the whole, the experimental evidence, taken alone, while not excluding other means of transmission, points to the conclusion that poliomyelitis is a contagious disease, spread from person to person through interchange of infectious secretions, the sources of infection being the clinically definite and clinically indefinite acute cases of poliomyelitis, convalescents, and passive human carriers.

Epidemiological Characteristics.

To give the epidemiological characteristics of poliomyelitis in general terms is difficult, not only because of the wide variations noted in different epidemics, but also by reason of the comparative paucity of statistics affording but a slender basis for generalization. Still, making due allowance for numerous minor exceptions which can not be noted in a brief discussion, certain general epidemiological characteristics stand out as fairly well established.

1. *Geographic distribution.*—Poliomyelitis is, even in the light of our admittedly imperfect statistics, known to be of practically world-wide distribution. Without attempting to enumerate the localities from which it has been reported, the following examples of localities where epidemics have occurred in recent years may serve to illustrate how far the occurrence of epidemics must be independent of such special climatic or other conditions as are peculiar to any restricted part of the globe.

Since 1905 epidemics have occurred in Europe from Scandinavia to the Mediterranean, from the British Isles to the Danube; in North America from Alaska to Alabama, throughout the breadth of the continent; in the West Indies; in South America; in Australia, and in the South Sea Islands. Thus the disease has occurred in more or less extensive outbreaks in both Eastern and Western Hemispheres, under extremes of latitude from the Equator to the northern Temperate Zone. It is noteworthy, however, that the most extensive outbreaks recorded have been in the northern portions of Europe and in the northern section of the United States, and Canada. The southern sections both of Europe and the United States, while not immune, have suffered less severely.

2. *Seasonal prevalence.*—In respect to season as to climate, poliomyelitis occurs under widely varying conditions. In the latitude of the northern United States cases have occurred, during the last few years, in every month of the year. Nevertheless the disease has a very distinctly characteristic seasonal prevalence, very constantly reaching its maximum both of sporadic and epidemic prevalence during the summer and autumn months, usually during the late summer and early autumn, and declining markedly during the late fall and early winter, to reach its lowest prevalence in midwinter and spring. In the Southern Hemisphere the disease reaches its

maximum prevalence from December to May, the months corresponding to the summer and autumn of northern latitudes. On the Pacific coast of the United States, where the difference between summer and winter is more in the matter of rainfall than of temperature, poliomyelitis has occurred mostly during the dry summer season.

On the whole this seasonal prevalence may be accepted as one of the most constant characteristics of the disease. In respect to the season of maximum prevalence poliomyelitis is in contrast with the more common diseases generally believed to be transmitted by direct contact and to find access to the body through the respiratory tract, such as scarlet fever, measles, diphtheria, whooping cough, etc., which usually reach their highest prevalence in the autumn, winter, and spring. In this respect, its seasonal prevalence, the disease more closely resembles infections of the digestive tract and diseases transmitted by such insects as are most prevalent in summer.

3. *Sporadic and epidemic occurrence.*—Poliomyelitis may be considered to have been endemic, for a considerable number of years at least, in the United States and Europe. Although the statistics are very fragmentary, it would seem a conservative statement that cases now occur every year in every State, and probably in every large city of the United States. Also, at least as regards the large cities, there is good reason to believe that this has been true for a number of years—since long before the disease began to attract attention by its occasional occurrence in epidemics.

This fact is of importance as indicating that the recent epidemics can not be ascribed off-hand to the introduction of a new infection, and that there probably are scattered throughout the country reservoirs of infection, capable of giving rise to the widely scattered so-called sporadic cases.

4. *General characteristics of epidemics.*—In undertaking any generalizations upon the characteristics of epidemics of poliomyelitis, it must be emphasized that to almost any broad general statements there are numerous exceptions, since epidemics vary most strikingly. For example, between the outbreak reported from Hancock County, Iowa, and that in Cincinnati, Ohio, are such radical differences as might be expected between epidemics of two essentially different diseases. Yet, with due regard to the exceptions, the following are believed to be, in general, the essential characteristics of epidemic outbreaks of poliomyelitis, as shown by numerous studies.

(a) *Irregular geographic distribution of epidemic foci.*—Almost if not all epidemic diseases affecting man, even those transmitted chiefly from the lower animals or through insects, are disseminated by travel and traffic, and, in their spread from a given point, are naturally expected to follow the chief routes of traffic. It has,

however, been noted of epidemics of poliomyelitis that they are often, if not usually, of irregular occurrence, not showing the distribution which would be expected as the result of dissemination along the main highways of traffic.

For example, the epidemic of 1907 in and around New York City, while it apparently extended north into New England, did not extend south to the near-by and intimately connected city of Philadelphia, nor west to the large cities in close communication with New York. The more recent epidemics of 1908, 1909, and 1910, in Minnesota, Nebraska, Iowa, and Kansas, are commonly, and perhaps justly, regarded as sequelæ of the epidemic of 1907 in New York, yet up to this time no epidemic has been recognized in Chicago, through which passes practically all the traffic from New York to the above-mentioned States. Again, in 1910, there occurred a rather severe epidemic in Washington, D. C., and a proportionately smaller outbreak in Philadelphia, while Baltimore, lying between these two cities, and in daily close communication with both, escaped without an epidemic—with at most only an increase in the number of endemic or sporadic cases. Numerous other instances might be cited where epidemics have failed to extend from a given focus to communities which appeared to be most intimately exposed and to offer equal opportunities for the spread of the infection. Such instances alone give the impression that epidemics may be due to a "place infection" not transferred by human travel—an infection of local water or food supplies, of insects or of domestic animals, whose range of travel is generally more restricted than that of man.

(b) *Rapid spread over wide areas.*—There are, however, other and almost equally numerous facts which argue against a "place infection" as the cause of epidemics, the chief of these being the rapid spread of epidemics over wide areas, as, for example, the spread over a whole State within a period of a few months. Of such rapid spread over wide areas of country there are numerous instances, in some of which it has appeared upon close study that the spread was in a general way radial from the earliest focus. This is illustrated by the course of the epidemic of 1910 in Iowa, and rather striking instances of similar rapid radial spread are given by Wickman in his account of the epidemic of 1905 in Sweden, and by Kling in his description of the Swedish epidemic of 1911. Such rapid spread over a large territory practically disproves the hypothesis that epidemic outbreaks are due to place infection independent of and not transferred by ordinary human traffic, since it is quite improbable that place infection of numerous localities within the same general territory should develop independently at the same time. The rapidity of spread has, too, in many instances, been such as to confirm the supposition that

man, the most rapidly and widely traveling animal, is the carrier of infection.

Both in its rapid spread over large areas and in its irregularity, skipping localities to which it might logically be expected to extend, poliomyelitis finds an analogy in cerebrospinal meningitis, a disease which we now have excellent reasons to believe is directly contagious, being spread from person to person chiefly through the agency of passive human carriers. These characteristics, therefore, do not necessarily indicate insect transmission nor argue against the direct transmissibility of poliomyelitis.

(c) *Small total incidence in the population affected.*—Even during so-called epidemics, poliomyelitis has characteristically a small incidence in the total population. To be sure, instances are not wanting of epidemics in which a large proportion, over 1 per cent, of the total population has been attacked; but these are rather exceptional instances and are practically confined to outbreaks in small towns and small rural areas. In a large aggregation of people, such as the population of a city with over 100,000 inhabitants, a county, or a State, epidemics seldom attack more than one in a thousand of the population, often not more than one in two to four thousand. The incidence of poliomyelitis, therefore, even in epidemics, is frequently less than the usual annual incidence of several of the more common endemic infectious diseases in the same communities, and strikingly less than the incidence which these common diseases frequently attain during epidemics. Notwithstanding this small incidence in the population, epidemics of poliomyelitis are self-limited, invariably declining in any limited area, as a single city or county, within a few months, and as a general if not invariable rule not recurring in that locality for a period of at least two years. This characteristic decline of epidemics after only a very small proportion of the population has been attacked appears not to be due to exhaustion of the sources or the vehicles of infection nor to be dependent altogether upon seasonal conditions. It is, in fact, difficult to account for on any hypothesis other than that of the exhaustion of susceptible material in the population.

(d) *Incidence in rural and urban communities.*—The recent occurrence of epidemics of poliomyelitis in so many countries, under such widely varying conditions, alike in tropical and frigid countries, in densely populated cities and in thinly settled remote country districts, has already been cited as showing conclusively that no set of conditions peculiar to any given locality is necessary for the development of an epidemic. It has, however, been observed as a very general rule that in small towns and in the country epidemics are more intense than in large cities, attacking a larger proportion of the

population. This has been found true not only when individual small towns are compared with large cities, but also for groups of all the smaller towns or all the rural population of a State, compared with all the large cities in the same area. The proportionately greater rural prevalence has in fact been so constant as to be unmistakably due not to mere chance but to some fundamental law. It is to be remembered, however, that this applies to epidemics; whether or not the same is true of the endemic or sporadic occurrence of the disease is not fully established. Although the records of the Massachusetts State Board of Health relative to the prevalence of poliomyelitis in that State for five years would seem to indicate that the prevalence has been constantly greater throughout that time in the rural towns than in large cities, yet even there a large proportion of the cases reported each year have occurred in small epidemics scattered throughout the State rather than as sporadic cases.

In respect to its greater rural than urban prevalence, poliomyelitis has often been contrasted to such contagious diseases as measles and scarlet fever, which are quite constantly more prevalent in densely populated cities, and this contrast has been used as an argument against the contagiousness of poliomyelitis.

However, though the endemic prevalence of scarlet fever and measles is greater in large cities, data, which are as yet scant and incomplete, indicate that epidemics, even of these diseases, attain a higher incidence in the population of small towns and rural communities than in the population of large cities. Certainly it is true, at least of measles, that epidemics attain their greatest intensity in communities which have long been free from the infection; witness, for example, the devastating epidemics reported from the Faroe Islands and other remote communities. There is indeed ground for the view that the potential epidemic prevalence of a disease like measles is, in a measure, inversely proportional to its endemic prevalence. Therefore, in regard to poliomyelitis, the fact that epidemics reach a higher incidence in rural districts can not be taken by itself as indicating that rural conditions are necessarily more favorable for the spread of the infection. Before such a conclusion can justly be drawn it will be necessary to show that its endemic or sporadic occurrence is also constantly less in the large cities.

(c) *Distribution among the various elements of the population in epidemic foci.*—The close study of epidemics has shown that the incidence of poliomyelitis is proportionately about the same among persons living under good and those living under poor hygienic conditions. This practically eliminates from consideration as of great importance in the causation of the disease such factors as are intimately associated with poor hygienic conditions—such factors, for

example, as insufficient and improper food, overcrowding, personal uncleanliness, and association with verminous insects.

No constant difference in regard to the incidence of poliomyelitis has been observed between the different races and nationalities constituting the population of areas where the disease has been epidemic. Nor has any constant relation been shown between the incidence of the infection and the topographic features of the various sections of the affected areas.

In one respect, however, poliomyelitis is constantly and very strikingly selective in its incidence, namely, in respect to age, its greatest incidence being always among children, especially those in the first half decade of life. Children under 5 years of age, constituting, in this country, from 9 to 12 per cent of the total population, furnish usually from 50 to 90 per cent of the cases of poliomyelitis. In some epidemics the disease is almost as prevalent proportionately in children between the ages of 5 and 15 as in those under 5 years of age, but adults (those past the second decade), constituting usually over 50 per cent of the total population, seldom furnish more than 10 per cent of the cases, usually a very much smaller proportion. In the Buffalo epidemic of 1912 the incidence of poliomyelitis in children under 5 years of age was fifty times greater in proportion to their number than in persons from 5 to 24 years of age, while the whole population over 24 years of age, more than 50 per cent of the total inhabitants of the city, remained entirely immune from attack.

As to the significance of this characteristic age incidence of poliomyelitis, its enormously greater incidence in children, it must indicate on the part of the children, either a generally greater exposure to the infective agent or else a greater susceptibility to its effects. So far as I am aware it has never been satisfactorily demonstrated that the children in any large epidemic focus were considerably more exposed to any probable source of infection than were the adults of the corresponding families. To be sure a number of suggestions have been made as to possible ways in which children might be generally more exposed to certain sources of infection than adults. For example, children drink milk more generally and more freely than do adults, but in every considerable epidemic of poliomyelitis of which I am aware, where the data collected have been sufficient, milk supplies could be quite definitely excluded as probable vehicles of infection. Moreover, milk-borne epidemics of other infectious diseases, as typhoid fever and scarlet fever, while characterized by a high rate of incidence in children, are not so strikingly—almost exclusively—confined to children as are epidemics of poliomyelitis. Even the proof that poliomyelitis is characteristically a milk-borne infection would not, therefore, offer an altogether satisfactory explanation of its very

excessive incidence in children under 5 years of age and of the almost complete immunity of adults.

Again, on the hypothesis that poliomyelitis may be transmitted by biting insects, it has been suggested that children are more exposed to infection in this way because of their scantier summer clothing and their inability to ward off such insects as readily as do adults. It seems altogether improbable that these considerations are sufficient to account for an incidence fifty times greater in children than in young adults; and, as a matter of fact, epidemic diseases known to be transmitted by biting insects (yellow fever, bubonic plague, typhus fever) are not, in nonimmune populations, characteristically children's diseases.

It has also been suggested that the infection may be commonly contracted from the dust of streets and dwellings, and that children, by reason of their habit of crawling and playing on the ground, are greatly more exposed to infection from this source than are adults. Especially as regards street dust it appears very doubtful that children, as a class, are greatly more exposed than adults, since the latter travel more widely over dusty streets. It certainly seems quite improbable that the exposure of children to dust infection is so enormously greater than that of adults as to account for the peculiar age incidence of poliomyelitis, assuming dust as the chief vehicle of infection.

Finally, because of their less cleanly and individualistic personal habits, children are probably more exposed than are adults to direct contagion through infectious secretions, yet experience teaches that contagious diseases in a nonimmunized, generally susceptible population are not disproportionately prevalent in children. As examples may be cited smallpox in unvaccinated communities, measles in new territory, typhoid fever in communities where contact is the chief factor in its spread.

On the whole it may be said that epidemiologic studies up to this time have failed to demonstrate greater exposure of children than of adults to the infective agent of poliomyelitis, and that the hypotheses put forward to explain an assumed greater exposure are not competent to explain it. The only hypothesis which appears to satisfactorily explain the enormously greater incidence among children is that they are, in general, more readily susceptible to the infection than are older persons.

Poliomyelitis quite commonly attacks both actually and proportionately more males than females. The disproportionate incidence in males, fairly constant in all age groups, is commonly most striking in the ages above 15 years. This is the reverse of what would be expected in a disease transmitted chiefly by direct contact with the sick. Females over the age of 15, being more commonly in contact

with the sick in the capacity of nurses, would be expected to develop the infection more frequently than males of the corresponding ages, and such is actually the case with scarlet fever and diphtheria. Since males of this age are more commonly out of doors and away from home than are females, the greater incidence of poliomyelitis among adult and adolescent males than females has very naturally suggested that the disease is usually contracted from some source other than the immediate environment of poliomyelitis patients, perhaps from some outdoor source, as from the soil, domestic animals, or outdoor insects. The greater incidence among males than among females is, however, not altogether incompatible with the view that the disease is really contagious, being transmitted usually through apparently healthy virus carriers. Males, whose business relations generally bring them into contact with more people, would theoretically have more chances of infection from carriers than females, and, assuming equal susceptibility, would more frequently develop the disease.

(f) *Local sources and routes of infection.*—Notwithstanding the minute care with which a considerable number of outbreaks of poliomyelitis have been studied, it has almost invariably been impossible to trace, with any degree of accuracy, the exact origin and routes of dissemination of the infection. Among the exceptions to this statement may be noted some of the small outbreaks described by Wickman, where it was possible to trace fairly definite lines of direct and indirect contact between cases; also a small outbreak, likewise reported by Wickman, where the evidence suggested that the infection had been spread through a common milk supply. These, however, are exceptional instances. In general the epidemiologic study of outbreaks has yielded only negative results. The very fact, however, that the results of study are usually negative has a certain significance.

For example, mass infection of common water and food supplies has been quite generally and definitely eliminated as a probable means of dissemination in the epidemics studied.

It has already been noted that it is usually impossible to trace any definite connection between the incidence of the disease and the immediate environmental conditions under which the various elements of the population live. This is rather strong evidence that the spread of infection is largely independent of such factors as overcrowding, improper feeding, personal uncleanness, and the presence of vermin.

In a general way, the incidence of poliomyelitis in different communities has appeared to be roughly proportional to the number of domestic animals present. This is, however, perhaps only another method of stating that the disease has been commonly most

prevalent in rural and semirural communities, where domestic animals are usually more numerous in proportion to the population than in large cities. There is no conclusive evidence of a characteristically greater incidence of infection among those persons who, by reason of their occupation or their residence, are most closely and intimately associated with domestic animals.

Domestic animals suffering from paralytic affections, clinically similar to poliomyelitis, have often been found in communities where poliomyelitis was epidemic, but these animals have not appeared sufficient, either in numbers or in the intimacy of their association with cases of poliomyelitis, to account for the epidemics. Also, it has not been shown that the paralyzes of animals are essentially similar to human poliomyelitis. Paralytic diseases of lower animals are not very uncommon, and though they have not been fully studied it appears that they may be due to a variety of causes. It is not even proven that such diseases are actually more common during epidemics of poliomyelitis. It is quite possible that their apparent association with epidemics of poliomyelitis is due to the fact that they are more apt to be noted and reported in communities where the epidemic prevalence of poliomyelitis has attracted attention to them.

Peculiar topographical or meteorological conditions can not be held to account for epidemics, since, as already noted, the range of such conditions under which epidemics have occurred is very wide. The unprecedented prevalence of poliomyelitis in certain sections of the United States in 1909 and 1910, during unusually dry seasons, gave considerable color to the hypothesis that deficient rainfall, with the consequent excessive prevalence of dust, was an important factor in the causation of epidemics, but broader experience has not confirmed this supposition. The fact that an epidemic of poliomyelitis may be declining in one community while in another, so near by as to be under approximately identical meteorological conditions, an epidemic may just be developing, is a further indication that the development and decline of epidemics are to a considerable extent independent of the weather conditions.

The evidence in regard to the contagiousness of poliomyelitis may be considered from two points of view: First, from the incidence of the disease among persons known to have been intimately associated with poliomyelitis patients, and second, from the proportion of recognized cases in which evidence could be obtained of association with previous cases.

The statistics presented in this report show that of 2,070 persons exposed to poliomyelitis by residence in the same houses and same families as poliomyelitis patients, only 14 (0.6 per cent) developed the disease in frank paralytic form. Even assuming that all of these actually contracted their infections from association with the sick

members of their families, the contagiousness of poliomyelitis must still be very slight—less than one-fifteenth that of scarlet fever, as shown by Chapin's extensive statistics, compiled on a similar basis. The inclusion of *abortive* cases, which, though not developing paralysis, may be conservatively diagnosed as poliomyelitis, approximately doubles the apparent contagiousness, which is still further increased (to 3.2 per cent) by the inclusion of less definite *suspected* cases. Yet, even including these indefinite suspicious cases, it is only in exceptional small outbreaks that the attack rate of poliomyelitis among exposed persons approximates that of scarlet fever or diphtheria. Similar evidence of the slight contagiousness of poliomyelitis has been afforded by its very small incidence among large groups of children exposed to contagion by association, in schools and institutions, with acute cases. The exceptions to this, as the outbreak reported in Hancock County, Iowa, and some small outbreaks reported by Wickman, do not invalidate the general truth of the statement, which is supported by a large mass of more or less definite observations reported by numerous observers from all parts of this country and Europe.

Taking up the evidence of contagiousness from the other point of view, namely, by attempting to trace cases back to association with previous cases, the statistics presented in this report agree with the observations made in most epidemics, that only a small proportion of cases can be ascribed to known contact with previous definite cases of poliomyelitis. Even including association with merely suspicious cases of illness, the majority of cases of poliomyelitis can not be traced to known contact, either direct or indirect, with any previous case. It is this apparent lack of relation between cases which has led so many investigators to seriously doubt or even deny the transmissibility of the disease.

On the whole it may be fairly definitely concluded that if poliomyelitis is transmissible from person to person through either the respiratory or the gastrointestinal excretions, it must be rather slightly or rarely transmissible, since the disease develops in such a small proportion of persons known to be intimately associated with acute cases. It also seems well established that the recognized cases of the disease must be relatively unimportant sources of infection. This follows necessarily, because a large proportion of the cases studied have been in persons not associated in any known way with previous recognized cases—often under circumstances which precluded the possibility of even indirect contact unless through the intervention of not one but a series of unrecognized carriers. In short, if poliomyelitis is a contagious disease confined to human beings, as certainly seems most probable at this time, the chief sources of infection must be cases of illness not recognized as poliomyelitis, or, more probably, apparently healthy carriers of the virus.

(g) *Evidence of transmission by insects.*—Aside from the evidence that poliomyelitis may be transmitted experimentally from infected monkeys by biting insects (bedbugs and stable flies), and that the virus may be mechanically carried upon and in the bodies of common house flies, the evidence in favor of the view that the disease may be in nature insect-borne is based upon certain broad epidemiological peculiarities and the results of intensive study of local outbreaks.

The broad epidemiological peculiarities which at once suggest that some insect is a necessary agent in the transmission of poliomyelitis are a seasonal prevalence corresponding to the season of maximum prevalence and activity of numerous insects; greater intensity of epidemics in rural than in urban communities; and the irregular spread of epidemics, suggesting that some local factor as yet unrecognized must be present in order that an epidemic may develop.

The insects which can merit consideration as necessary or even important factors in the transmission of poliomyelitis may be expected to exhibit the following characteristics:

Distribution over an approximately world-wide territory.

Maximum prevalence and activity during the late summer and fall months, but in the North Temperate latitudes a certain though diminished prevalence and activity throughout the year.¹

Prevalence in large cities, small towns, and rural districts.

Comparatively uniform distribution among the various social strata, among persons living under good and those living under poor hygienic conditions.

As to the seasonal prevalence of poliomyelitis, it is not so definitely limited to the warmer months as would be expected if the disease is transmitted by some outdoor insect, such as mosquitoes or biting flies. It has certainly not the sharply defined seasonal prevalence of yellow fever. On the other hand, it has a more sharply defined summer and autumn prevalence than would be expected in a disease transmitted by insects more strictly parasitic to man, as bedbugs, lice, and fleas. Typhus fever transmitted by the louse is rather a winter than a summer disease, and bubonic plague transmitted by fleas is by no means limited in its prevalence to the warm seasons.

As noted elsewhere in this report and in previous publications, the seasonal prevalence of poliomyelitis corresponds in a general way to that of typhoid fever, especially to that of rural typhoid and the "residual" typhoid of cities with good water supplies; and even more closely to the seasonal prevalence of infantile diarrhea and enteritis. Therefore, while the seasonal prevalence of poliomyelitis is markedly dissimilar to that of most so-called contagious diseases believed to be

¹ Cases of poliomyelitis occurring during the winter months may possibly be explained as having been contracted during the summer or fall and developing only after a very prolonged incubation, but this can be considered only as a mere surmise.

respiratory infections, it is at least as nearly like that of digestive-tract infections as of any known insect-borne disease.

The greater rural than urban intensity of epidemics of poliomyelitis has already been discussed, and mention made of the fact that the data now available do not prove the existence of more favorable conditions for the spread of infection in rural communities; they may even be interpreted as indicating a lesser rate of endemic prevalence in the latter than in large cities.

The fact that the most careful study of discrete outbreaks has often failed to discover any avenues of contact between cases has suggested to a number of students of the subject that the infection was disseminated through insects capable of traveling or being carried for considerable distances. The assumption that insect transmission offers any explanation of the scattering rather than grouping of cases is of doubtful validity, contradicted rather than supported by actual observation of epidemic diseases known to be transmitted by insects. Certainly the grouping of cases in close proximity to each other or their association with some definite focus is quite characteristic of epidemics of yellow fever, typhus, bubonic plague, and fly-borne epidemics of typhoid fever. The traveling habits of the stable fly might appear to account for the occurrence of cases of poliomyelitis in persons at a considerable distance from the original source of infection, but even so it would be expected that if this were the usual method of transmission cases would be more grouped in localities where these flies are strikingly abundant, as in the vicinity of large stables, and that infection would be noticeably common in persons whose occupation greatly exposes them to the bites of stomoxys, as teamsters and hostlers.

Again, two facts which fail utterly of explanation by the theory of insect transmission per se are the small total incidence of poliomyelitis, and more especially its preponderating incidence in children. Diseases known to be insect borne are not characteristically more prevalent in children than in adults, nor is there any obvious reason why they should be unless children are more susceptible to the infection. The hypothesis of insect transmission, therefore, like that of transmission by direct contagion, leads back to the assumption of general immunity to the infection on the part of adults and to unrecognized sources of infection.

On the whole, while there is much to suggest that poliomyelitis is insect borne, its epidemiology appears to be equally well explained on the theory of direct transmissibility through infectious secretions, and the latter theory is at present supported by more experimental evidence than is the theory of insect transmission.

Summary.

Reviewing briefly the data and considerations which have been discussed, poliomyelitis is due to a specific infective agent, of which the only demonstrated natural sources are infected¹ human beings, who may be divided into the following groups: The recognized sick, convalescents, the sick not recognizable as poliomyelitis cases, and passive virus carriers apparently in good health. The infective agent is known to be discharged from these sources in the excretions of the respiratory and digestive tracts; it is known to be fairly resistant to the destructive agencies encountered in nature outside of the human body. Perhaps the most significant fact in regard to the experimental transmission of poliomyelitis to monkeys is that they may be infected by rubbing the virus on the nasal mucous membrane. Infection through the digestive tract or through the agency of biting insects has been found more difficult and less constant.

The disease is, in nature, of widespread though rare sporadic or endemic occurrence. In epidemics it has occurred in recent years over a large part of the world, the outbreaks being sometimes discrete, at other times spreading rapidly, but irregularly, over wide areas. Such epidemics characteristically run a rather rapid course in a given community, declining after a few months or less, after having attacked (so far as is evident) only a small proportion of the total inhabitants, usually not more than one in a thousand; and do not recur in the same locality for a period of at least two years. In epidemic foci children under 5 are attacked much more often than are older persons, the whole adult population remaining virtually immune in some epidemics.

The rapid spread of epidemics over wide areas, their spontaneous decline after only a small proportion of the inhabitants have been attacked, and above all the preponderating incidence in young children have not been satisfactorily explained by any hypothesis other than that the infective agent, during epidemics, is widespread, reaching a large proportion of the population, but only occasionally finding a susceptible individual, usually a young person, in whom it produces characteristic morbid effects. Assuming this rare susceptibility, the well-established facts collected by epidemiologic studies are compatible with the evidence of laboratory experiments that the disease is directly transmissible from person to person.

As to what constitutes susceptibility or the converse—immunity—practically nothing can be deduced except that age is obviously a

¹ Under the term "infected human beings" as used here are included passive carriers of the virus, persons in whom the virus has found lodgment and multiplied, without, however, producing clinically evident effects. Such persons should, perhaps, be called "infested" rather than infected, reserving the latter term for those manifesting a clinical reaction.

factor of importance, susceptibility being generally greatest in the first half decade of life, thereafter progressively diminishing until in adult life there is a very general immunity to natural infection. The reason for this is at present a matter of speculation. Conceivably the greater immunity of adults may be due to a nonspecific resistance, developing naturally with maturity, without reference to previous exposure to or infection with the specific virus of poliomyelitis. On the other hand, there are certain facts which suggest that the very general immunity of adults may be specific, acquired from previous unrecognized infection with the virus of poliomyelitis. This, however, is at present merely a speculative suggestion.

POLIOMYELITIS.

VERMONT PUTS RESTRICTIONS UPON CHILDREN FROM NEW YORK CITY.

On July 6 the State Board of Health of Vermont issued regulations in regard to the supervision and quarantine of children under 15 years of age coming into the State from New York City. The text of the regulations will be found in full on page 1879.

COURT DECISIONS PERTAINING TO PUBLIC HEALTH.

A DIGEST OF THE JUDICIAL OPINIONS PUBLISHED IN THE PUBLIC HEALTH REPORTS
BEFORE JANUARY 1, 1916.

By JASON WATERMAN, LL.B., Assistant Editor.

The following digest includes the judicial opinions which were published in the Public Health Reports between May 30, 1913, when the first opinion was published, and December 31, 1915. Since July 1, 1914, current digests of the reports of the Federal and higher State courts have been carefully examined in the endeavor to secure reports of all judicial cases relating directly to the public health. Opinions relating to house plumbing, noises, and offensive odors have not been included. While nearly everything which affects mankind has or may have some relation to the health of individuals, it is believed that no subject has been omitted which is sufficiently important from a public health standpoint to justify its inclusion.

Health Authorities.

Contract of a board of health with one of its members.—Members of boards of health occupy positions of trust, and the Supreme Court of Maine holds that they should not place themselves in situations where their personal interests may conflict with their duties to the communities for which they act. Under the decision referred to, a contract for services made by a board of health with one member of the board is void, even when the contract is reasonable and made in good faith; but it may be possible for a member of a board who has rendered services to recover what the services are reasonably worth, even though his contract with the board is not recognized by the court. (*Lesieur v. Rumford*, P. H. R., Oct. 1, 1915, p. 2967.)

Removal of members of board of health.—The charter of the city of New Rochelle, N. Y., provided that the mayor might remove appointive officers after service of written charges, hearing, and the taking of testimony under oath. The Supreme Court of New York decided that members of the city board of health, before removal, were entitled to written charges specifically alleging substantial cause for removal, reasonable notice of the hearing, permission to cross-examine witnesses, an opportunity to be heard and to produce witnesses in defense, and a just judgment. If these were denied them and they were arbitrarily removed, they had a right to appeal to the courts. (*Loevin v. Griffing*, P. H. R., Aug. 27, 1915, p. 2589.)

Selection of health officer by lot.—A city board of health was equally divided in choosing a health officer. They decided the matter by drawing lots, but the successful candidate was never formally elected. The Wisconsin Supreme Court decided that the selection by lot conferred no right to the office. (*Meany v. Staehle*, P. H. R., Sept. 17, 1915, p. 2829.)

Power of State board of health to suppress epidemics.—Under the laws of Nebraska, if a county board of health refuses to take measures to suppress an epidemic, the State board of health has power to employ a physician to do what is necessary to check the disease, and such physician can recover from the county reasonable compensation for his services, even though he is a member of the county board of health. (*Shidler v. York County*, P. H. R., Aug. 14, 1914, p. 2151.)

Compensation of members of board of health.—A member of a county board of health is entitled to compensation for unusual services rendered in suppressing epidemics even though under ordinary circumstances the members of the board serve without compensation. (*Plumb v. York County* [Nebr.], *Shidler v. York County* [Nebr.], P. H. R., Aug. 14, 1914, pp. 2151, 2153.)

Compensation of county physician.—A county physician who receives \$5 per month for certain services regularly rendered is entitled to additional compensation for unusual services performed by direction of the chairman of the county board of health in suppressing an epidemic of smallpox. (*Plumb v. York County* [Nebr.], P. H. R., Aug. 14, 1914, p. 2153.)

Suits against municipal authorities.—In Arkansas suits at law for tort can not be brought against municipal corporations, because they are agents of the State for governmental purposes; but in a proper case they may be enjoined from creating a nuisance or be required to abate one already created by them. (*Jones v. Sewer District*, P. H. R., Oct. 22, 1915, p. 3177.)

Liability for negligence of employees.—The Court of Appeals of the District of Columbia decided that a municipal corporation is not liable for damage caused by the negligence of employees of the health department in the performance of their duties. The reason for this rule is that those duties are of a public or governmental character for the general public welfare. (*Coates v. D. C.*, P. H. R., May 1, 1914, p. 1111.)

Municipality not liable for wrongful acts of its employees.—A city is not liable for the wrongful acts of its servants or their negligence in operating a septic tank; but it is liable for damage resulting from the improper construction of the apparatus which the servants are using. (*El Dorado v. Scruggs* [Ark.], P. H. R., Nov. 19, 1915, p. 3439.)

Proof of the population of a city.—The fact that a city has more than a certain number of inhabitants can be shown in court, for the purpose of determining the jurisdiction of a board of health, only by an official census. (*McLaughlin v. Bunzel* [Mass.], P. H. R., July 2, 1915, p. 2032.)

Creation of boards of health.—The protection and preservation of the public health is one of the primary fields for the exercise of the

police power of the State. Under this power the legislature may create boards of health and bestow upon them necessary powers to promote the general health of the people. (*Welch v. Coglan* [Md.], P. H. R., Oct. 29, 1915, p. 3241; *Hawkins v. Hoyer* [Miss.], P. H. R., Apr. 9, 1915, p. 1111; *Koy v. Chicago* [Ill.], May 15, 1914, p. 1267; *People v. Tate* [Ill.], Apr. 17, 1914, p. 973.)

Delegation of legislative power.—Statutes conferring upon boards of health the power to adopt ordinances, rules, and regulations necessary to advance the public health are not unconstitutional as being a delegation of legislative power which the constitution gives to the legislature only. (*Hawkins v. Hoyer* [Miss.], P. H. R., Apr. 9, 1915, p. 1111; *People v. Tate* [Ill.], Apr. 17, 1914, p. 973.)

Inconvenience to individuals.—Individual convenience and profit must be enjoyed in proper subjection to and observation of the laws affecting the public health, which is at the foundation of the public good. (*State v. Starkey* [Me.], P. H. R., Aug. 14, 1914, p. 2149; *Kuhlman v. Rucker* [U. S. Dist. Ct.], P. H. R., Apr. 2, 1915, p. 1033.)

Powers of municipal boards derived from State.—A political corporation, such as a municipal board of health, "has and in the nature of things can have only such powers as are delegated to it by the legislature, either expressly or by necessary implication." (*New Orleans v. Stein* [La.], P. H. R., Oct. 29, 1915, p. 3259.)

State may delegate power to require local improvements for the protection of health.—It is in the power of the State to require local improvements to be made which are essential to the health and prosperity of any community within its borders. Such authority may be lodged in any board or tribunal which the legislature may designate, and it is for the legislature to prescribe the way in which the means to meet the cost of the work shall be raised. (*Welch v. Coglan* [Md.], P. H. R., Oct. 29, 1915, p. 3241.)

Laws, Regulations, and Ordinances.

Power of municipality to enact ordinances.—A municipality through its health officers and other proper agents may enact measures for the safety and to preserve the health of its inhabitants. (*Kuhlman v. Rucker* [U. S. Dist. Ct.], P. H. R., Apr. 2, 1915, p. 1033.)

Reasonable regulations are constitutional.—It is only where the power to regulate has been clearly abused that the courts will declare the manner of its exercise to be in violation of constitutional rights. (*Koeffler v. State* [Wis.], P. H. R., Sept. 18, 1914, p. 2455; *State v. Starkey* [Me.], P. H. R., Aug. 14, 1914, p. 2149.)

Regulations liberally construed.—The Kentucky Court of Appeals decided that the powers of local boards of health, conferred by the State legislature for the protection of the public health, should be liberally construed in order to effectuate the purpose of the legisla-

ture. (*Covington Board of Health v. Kollman*, P. H. R., Mar. 13, 1914, p. 653.)

Orders of State board of health must be reasonable.—Orders issued by a State board of health, under authority of a general statutory authorization, must be reasonable, and if it can be shown that they are not reasonable, they will be declared invalid by the courts. (*Welch v. Coglan* [Md.], P. H. R., Oct. 29, 1915, p. 3241.)

Power to adopt ordinances on the same subject granted to two different bodies.—Different provisions of a statute granted authority to the city board of health and to the city council to enact ordinances covering the same subject matter. The court held that an ordinance adopted by the board of health was not invalid because of the conflict of authority, the city council not having adopted any conflicting ordinance. (*New Orleans v. Sanford* [La.], P. H. R., Oct. 29, 1915, p. 3248.)

Requirements to make regulations effective.—Rules and regulations of boards of health must be in writing, adopted in an official manner, and duly entered of record. (*People v. Tait* [Ill.], P. H. R., Apr. 17, 1914, p. 973.)

Public sentiment considered in determining reasonableness of regulations.—Police regulations to be valid must be reasonable, necessary, and not unduly oppressive. The lawmaking power, in their enactment, takes into consideration the public sentiment of the community as a measure of the degree of regulation to which private property shall be subjected for the public good, and nowhere do the courts so completely reflect the state of public opinion as in deciding cases involving the exercise of the police power. (*Dade v. U. S.* [D. C.], P. H. R., May 30, 1913, p. 1099.)

Part of law valid and part invalid.—One provision of a law, which would be valid if standing alone, should not be held to be void because some other provision of the same law dealing with a different subject may be invalid. (*Koeffler v. State* [Wis.], P. H. R., Sept. 18, 1914, p. 2455; *Welch v. Coglan* [Md.], P. H. R., Oct. 29, 1915, p. 3241.)

Penalties—How fixed.—Where a State law fixes the penalty for violation of a regulation of a municipal board of health, the board has no authority to provide a different penalty. (*New Orleans v. Stein* [La.], P. H. R., Oct. 29, 1915, p. 3259.)

Morbidity Reports.¹

Evidence.—A Vermont physician was charged with failure to report a case of diphtheria. His defense was that he did not recognize the disease. The Supreme Court of Vermont decided that it was proper to introduce evidence showing that the physician had knowledge of

¹ Reprint No. 205 from the Public Health Reports is a digest of court decisions relating to morbidity reports. It includes the cases in the Federal and higher State courts previous to 1914.

facts which indicated that diphtheria was present in the community, for the purpose of proving that he knew, or should have known, that his patient had diphtheria. (*State v. Pierce*, P. H. R., Mar. 13, 1914, p. 651.)

Vaccination.

Vaccination required as a condition of admission to a university.—The Court of Appeal for the First District of California decided that the board of regents of the University of California had the right to make and enforce reasonable rules requiring vaccination as a condition of admission to the university. In the opinion of the court, Mr. Justice Richards made the following statements: "There are certain subjects affecting the general welfare over which the legislature has been wisely invested with ultimate control. These subjects are those embraced within the general police powers of the State, and among them is the subject of the general health. * * * It [the legislature] has power to pass general laws, in the nature of health regulations, upon the subject of vaccination, prescribing the extent to which persons seeking entrance as students in educational institutions within the State must submit to its requirements as a condition of their admission. * * * The State of California stands committed to the policy of requiring vaccination as the best preventive means known to medical science for lessening the liability to infection with a dreaded and dangerous disease." (*Williams v. Wheeler*, P. H. R., June 5, 1914, p. 1471.)

Rabies—Prevention of.

Muzzling of dogs.—The Supreme Court of New York upheld a regulation of the New York City board of health requiring that dogs must be muzzled when in public places in the city. The court said: "The possession of dogs in the city is subject to the limitation that such possession must not interfere with the security, health, and comfort of the other inhabitants of the city, and the ordinances made by the proper municipal authorities for the protection of health or comfort must be accepted as limitations upon the privilege of such possession." (*Knoblauch v. Warden of City Prison*, P. H. R., Oct. 1, 1915, p. 2970.)

Quarantine.

Requirements to make quarantine regulations effective.—Under the laws of the State of Illinois, rules or regulations establishing quarantine, to be enforceable in court, must be in writing, adopted in an official manner, and duly entered of record. (*People v. Tait*, P. H. R., Apr. 17, 1914, p. 973.)

Order authorized by telephone.—Under the law of North Dakota, quarantine authorized by the members of a township board of

health by conversation over the telephone, without a regular meeting of the board, is valid, though the law requires three days' notice of meetings of the board. (*Plymouth v. Klug*, P. H. R., May 1, 1914, p. 1112.)

Expenses of quarantined household—How borne.—The Supreme Court of North Dakota decided that a person who has been quarantined, if financially responsible, may be required to reimburse the township for expense incurred in transporting supplies to him while his house was under quarantine. (*Plymouth v. Klug*, P. H. R., May 1, 1914, p. 1112.)

Plague Prevention—Rat Proofing of Buildings.

Rat proofing ordinances.—In view of the danger to the community from plague and the migratory habits of rats, it is reasonable to make rat-proofing ordinances apply throughout a city instead of restricting their operation to limited areas around known foci of infection. (*Kuhlman v. Rucker* [U. S. Dist. Ct.], P. H. R., Apr. 2, 1915, p. 1033.)

Regulation valid, though it could not cover all buildings.—An ordinance requiring the rat proofing of all buildings in a city was not invalid because it could be enforced only against privately owned buildings and the public buildings were not rat proofed. The board of health in passing the regulation was justified in doing the best it could and going as far as the circumstances allowed it to go. (*New Orleans v. Sanford* [La.], P. H. R., Oct. 29, 1915, p. 3248.)

Time for compliance with ordinances.—An ordinance requiring the rat proofing of all buildings in a city must allow property owners time to comply with its provisions before they become subject to penalties for violation of the ordinance. (*New Orleans v. Sanford* [La.], P. H. R., Oct. 29, 1915, p. 3248.)

Discretion of health officer.—A rat-proofing ordinance which provides different methods of rat proofing different classes of buildings, but allows the health officer to permit the use of methods required in buildings of one class to be used in rat-proofing buildings of another class, is null, as "the effect of this discretion is to leave it optional with the health officer whether the ordinance shall be enforced or not according to its terms." (*New Orleans v. Sanford* [La.], P. H. R., Oct. 29, 1915, p. 3248.)

Physical Examination of School Children.

The Supreme Court of South Dakota decided that a school board has the power to require a report by a physician showing the physical condition of a child as a prerequisite to the admission of the child to school. The board of education of the city of Aberdeen, S. Dak.,

adopted a resolution requiring a report by a physician showing certain data regarding the physical condition of a child before that child could be admitted to the school. The necessary examination might be made by the school physician or by a physician employed by the parents. A parent refused to permit his child to undergo the examination, and claimed the right to have his child educated in the public schools although no physician's report had been made. The court held that the resolution was reasonable and that it was within the power of the school board. (*Streich v. Board of Education of Aberdeen*, P. H. R., Nov. 12, 1915, p. 3361.)

Marriage of Diseased Persons.

Certificate of health required before marriage.—The Wisconsin Supreme Court decided that the so-called "Wisconsin eugenics law" was valid. This law requires all male applicants for a marriage license to file a physician's certificate showing that they are free from venereal diseases "so nearly as can be determined by physical examination and by the application of recognized clinical and laboratory tests." In the opinion Chief Justice Winslow stated the following legal principles: "The power of the State to control and regulate by reasonable laws the marriage relation, and to prevent the contracting of marriage by persons afflicted with loathsome or hereditary diseases, which are liable either to be transmitted to the spouse or inherited by the offspring, or both, must on principle be regarded as undeniable. * * * When the legislature passes a constitutional law, that law establishes public policy upon the subjects covered by it, and that policy is not open to question by the courts." The court also decided that the fact that the law required a certificate from males and made no such requirement as to females did not make it unreasonably discriminatory or unconstitutional; and that it was not necessary for physicians to make the Wassermann test before issuing the required certificate. (*Peterson v. Widule*, P. H. R., Sept. 11, 1914, p. 2391.)

Venereal disease as ground for annulment of marriage.—The Wisconsin Supreme Court also held that gonorrheal infection of one party at the time of the marriage justified the court in annulling the marriage. (*C. v. C.*, P. H. R., Dec. 31, 1915, p. 3847.)

Tuberculosis as ground for annulment of marriage.—The Supreme Court of New York annulled a marriage because one party concealed from the other the fact that he was suffering from tuberculosis at the time of the marriage. The court said: "There can be no doubt that tuberculosis is a disease of an infectious character, and that close association with a person afflicted with that disease, unless attended by great care, occasions danger of infection to those coming into close contact with such person. While it may be that such care is

possible in the marital relation, nevertheless I do not think it should be the policy of the courts to sustain the obligations of a union which would entail the burden and danger that would follow under the circumstances." (*Sobol v. Sobol*, P. H. R., Oct. 22, 1915, p. 3175.)

Occupational Diseases and Workmen's Compensation Laws.

The Massachusetts law.—Under the Massachusetts workmen's compensation law, employees coming within the terms of the law are entitled to compensation for any disease or injury which arises out of and in the course of the employment which causes incapacity for work and thereby impairs the ability of the employee for earning wages. (*Johnson v. London Co.*, P. H. R., July 3, 1914, p. 1781.)

The Supreme Judicial Court of Massachusetts has decided that the following causes of disability were included within the term "personal injury" as used in the Massachusetts law: Lead poisoning (*Johnson v. London Co.*, P. H. R., July 3, 1914, p. 1781); blindness resulting from an acute attack of optic neuritis induced by poisonous gases (*In re Hurle*, P. H. R., June 12, 1914, p. 1583); heavy lifting by an employee whose heart was weak (*In re Fisher*, P. H. R., July 2, 1915, p. 2033); suicide resulting from insanity caused by injury (*In re Sponatski*, P. H. R., July 9, 1915, p. 2087); heart disease, which was aggravated by excitement and exertions in an emergency (*In re Brightman*, P. H. R., May 14, 1915, p. 1455.)

The Michigan law.—The Supreme Court of Michigan decided that it was not the intention of the Michigan Legislature in passing the Michigan workmen's compensation law to provide compensation for industrial or occupational diseases, but for injuries arising from accidents alone. Injury from lead poisoning was held not to be included within the terms of the law. (*Adams v. Acme Co.*, P. H. R., Nov. 6, 1914, p. 2999.)

Milk.

Right to regulate sale of.—Milk is so generally used and the effect of its impurity or unwholesomeness is so serious that the regulation of its sale is an imperative duty which has been universally recognized. This regulation in minute detail is essential, and extends from the health and keeping of the cows which produce the milk through all the processes of transportation, preservation, and delivery to the consumer. (*Koy v. Chicago [Ill.]*, P. H. R., May 15, 1914, p. 1267.)

Pasteurization—Recording apparatus required on pasteurizer.—An ordinance of the city of Chicago required that a recording apparatus be used on pasteurizers which would show the temperature and the time of exposure to that temperature. The Supreme Court of Illinois held that the ordinance was valid. (*Koy v. Chicago*, P. H. R., May 15, 1914, p. 1267.)

Tuberculin test required.—The Supreme Court of Mississippi upheld a regulation of the State board of health which required that all

cows used by dairymen selling milk should be tuberculin tested semi-annually by a competent veterinarian. The court said that the purpose of the regulation was to prevent disease among human beings, and that therefore the regulation was properly made and enforced by the State board of health rather than by the State live stock commission. (*Hawkins v. Hoyer*, P. H. R., Apr. 9, 1915, p. 1111.)

Tuberculin test required.—The Supreme Court of the United States upheld an ordinance of the city of Milwaukee, Wis., relative to milk produced outside the city for sale within the city. The ordinance required that each person bringing or shipping milk into the city for sale should file with the city health department a certificate showing that the milk was drawn from tuberculin-tested cows. It also provided that if the provisions of the ordinance were not complied with the milk should be confiscated and destroyed. (*Adams v. Milwaukee*, P. H. R., May 30, 1913, p. 1102.)

Sale in glass bottles required.—The board of health of the city of Covington, Ky., adopted a regulation requiring that milk sold in quantities less than 1 gallon must be delivered in transparent glass bottles. The Kentucky Court of Appeals decided that this regulation was valid. (*Covington Board of Health v. Kollman*, P. H. R., Mar. 13, 1914, p. 653.)

Federal pure-food law applies to milk.—Milk which was filthy and decomposed, containing colon bacilli and streptococci in large numbers, was held by the Court of Appeals of the District of Columbia to be adulterated within the meaning of that term as used in the Federal pure food and drugs law. (*Dade v. U. S.*, P. H. R., May 30, 1913, p. 1099.)

Standards for milk prescribed by State board of health.—The regulations of the Kansas State Board of Health prescribing standards for milk were upheld by the State Supreme Court. (*State v. Meyer*, P. H. R., Aug. 6, 1915, p. 2323.)

Adulteration.—The Supreme Court of New York and the Supreme Judicial Court of Massachusetts rendered decisions construing the State statutes prohibiting the adulteration of milk. (*People v. Martin* [N. Y.], P. H. R., Sept. 10, 1915, p. 2771; *Commonwealth v. Elm Farm Milk Co.* [Mass.], P. H. R., Sept. 24, 1915, p. 2908.)

Foodstuffs.

Sherley amendment to the Federal pure food and drugs law.—The Supreme Court of the United States decided that Congress in passing the Sherley amendment to the United States pure food and drugs law intended to prevent injury to the public health by the sale and transportation in interstate commerce of foodstuffs containing deleterious substances, and that it was necessary to prove, in order to secure a verdict of condemnation under this part of the statute,

that the added poisonous or deleterious substances are such as may render the foodstuff injurious to health. (*U. S. v. Lexington Co.*, P. H. R., Mar. 13, 1914, p. 656. See also *Dade v. U. S.* [D. C.], P. H. R., May 30, 1913, p. 1099.)

Poisonous foreign substance in foodstuff—Manufacturer liable.—The Supreme Court of Tennessee decided that a manufacturer of foodstuffs which are placed on sale in sealed packages must exercise care to see that nothing unwholesome or injurious is contained in the packages, and he is liable to the consumer for injury resulting from negligence in filling a package even when the consumer purchases the package from a dealer and not directly from the manufacturer. (*Boyd v. Coca-Cola Bottling Works*, P. H. R., Oct. 15, 1915, p. 3095.)

Cold storage of food.—The New York law limiting the time during which foodstuffs can be retained in cold storage was held to be valid. (*People v. Finkelstein*, P. H. R., Oct. 8, 1915, p. 3042.)

Inspection of meat.—The courts of New Jersey and Maine rendered decisions upholding the right of a city to require that meat sold in the city should be inspected at the place where the slaughtering is done even if this place is outside of the city. (*Feld v. Passaic* [N. J.], P. H. R., Sept. 18, 1914, p. 2456; *State v. Starkey* [Me.], P. H. R., Aug. 14, 1914, p. 2149.)

The Supreme Court of Indiana affirmed a conviction under a State law for manufacturing foodstuffs from unwholesome meat. (*Gardner v. State*, P. H. R., July 2, 1915, p. 2031.)

Habit-Forming Drugs.

Power of the legislature.—In the exercise of the police power it is competent for the legislature to strictly regulate the sale and distribution of any drug of a poisonous nature the use of which tends to debauch the public in the formation of a habit which undermines the physical, mental, and moral constitution of its users. (*Hyde v. State* [Tenn.], P. H. R., Sept. 24, 1915, p. 2903.)

The Supreme Court of Tennessee decided that the antinarcotic law of that State was constitutional. The law prohibited the sale of certain poisons except on the prescription of a practicing physician and required that a physician who prescribes habit-forming drugs must be in personal attendance upon the patient for whom they are intended. (*Ibid.*)

Securing of evidence—Detectives.—The same court decided that the fact that a prescription was secured by a detective for the purpose of securing evidence did not constitute a valid defense. (*Ibid.*)

Kentucky law.—The Kentucky Court of Appeals decided that the Kentucky law of 1912 was valid. The law prohibited the sale of opium or its alkaloidal salts or their derivatives for any purpose other than for "legitimate use." (*Commonwealth v. Gabhart*, P. H. R., Jan. 1, 1915, p. 53.)

New Jersey law.—The Supreme Court of New Jersey decided that the antinarcotic law of that State was penal in its objects and could not be enlarged in its scope by judicial construction; and it was held that the statute did not include heroin among the drugs the sale of which was regulated. (*State v. Norwood*, P. H. R., Aug. 20, 1915, p. 2511.)

Evidence to prove nature of drug.—In Georgia it was decided that a chemical analysis was not necessary to prove that a drug which was sold was cocaine, but that this might be proved by the testimony of addicts who were familiar with the drug and its effects. The Colorado Supreme Court reversed a conviction for selling cocaine on the ground that the testimony in the case was not sufficient to show the nature of the drug. (*Butler v. State* [Ga.], P. H. R., Aug. 14, 1914, p. 2154; *Stadler v. People* [Colo.], P. H. R., Aug. 20, 1915, p. 2512.)

Federal opium laws.—A person who receives smoking opium in the United States must bear in mind the statutes regulating its importation and possession, must ascertain its history, and be prepared to show if necessary that it was not unlawfully imported. (*U. S. v. Yee Fing*, P. H. R., Sept. 24, 1915, p. 2907.)

In a prosecution for unlawfully manufacturing smoking opium, it is proper to introduce evidence showing that the defendant is an opium smoker in order to show that he is under a temptation to supply himself with smoking opium. (*Tam Shi Yan v. U. S.*, P. H. R., Dec. 31, 1915, p. 3848.)

THE FEDERAL ANTINARCOTIC LAW.

Meaning of section 8.—Section 8 of the Harrison antinarcotic law provides that "it shall be unlawful for any person not registered under the provisions of this act, and who has not paid the special tax provided for by this act, to have in his possession or under his control any of the aforesaid drugs; and such possession or control shall be presumptive evidence of a violation of this section and also of a violation of the provisions of section 1 of this act." (38 Stat. L., 785; P. H. R., Feb. 19, 1915, p. 573.)

Judge Neterer, of the United States Court for the Western District of Washington, said that the purpose of Congress in enacting the law was to "prohibit the importation, manufacture, or sale of the drugs described; and by this act the drug became an 'outlaw' in the country; its presence Congress has the right to trace, and has the power to punish any person in whose possession this 'outlawed' article may be found."¹ (*U. S. v. Brown*, P. H. R., Dec. 10, 1915, p. 3631.)

¹ The United States Supreme Court decided that the law in question is primarily a revenue measure, and practically overruled the decision of Judge Neterer. (See Public Health Reports, June 16, 1916, p. 1561, *United States v. Jim Fucy Moy*.)

On the other hand, Judge Bourquin, of the United States District Court for Montana, decided that section 8 does not purport to do more than "make unlawful mere possession of the drugs by any person of the classes by section 1 required to register and pay and who have not, and to create a statutory rule of evidence." (U. S. v. Woods, P. H. R., Dec. 17, 1915, p. 3715.)

Judge Neterer held that an indictment which charged that the defendant had in his possession and under his control a preparation of opium and that he had not registered and paid the special tax stated facts sufficient to constitute an offense under the statute; but Judge Bourquin decided that a similar indictment was insufficient, in that it did not allege that the defendant belonged to any of the classes of persons required to register and pay the special tax.¹

Physicians' prescriptions—Amount of drug prescribed.—The United States Court for the Western District of Tennessee decided that the law does not limit the amount of habit-forming drugs that a physician may prescribe. (U. S. v. Friedman, P. H. R., Dec. 24, 1915, p. 3777.)

Drugs and Poisons.

The Sherley amendment—False statements regarding the curative properties of "patent medicines."—The Sherley amendment to the Federal pure food and drugs law makes it unlawful to ship in interstate commerce any drug "if its package or label shall bear or contain any statement, design, or device regarding the curative or therapeutic effect of such article * * * which is false and fraudulent."

The United States District Court for the Eastern District of Pennsylvania decided that this amendment was constitutional and valid. (U. S. v. American Laboratories, P. H. R., Oct. 8, 1915, p. 3037.)

It was also decided that when there is doubt as to whether statements regarding the curative properties of "patent medicines" are fraudulent or are honest expressions of opinion the question should be decided by the jury.

The court said that "such laws should be administered in such a way as that honest and well-intentioned business may not be hampered, but the detection of frauds and cheats will be made sure, and their conviction and punishment rendered certain." (Ibid., p. 3041.)

Misbranding "patent medicines."—Under the United States pure food and drugs law, a patent medicine is misbranded if the statement regarding the drug, even though not "flatly and boldly false" is such as to create a false impression in the mind of the reader as to the "ingredients or the composition of the drug." (Ibid., p. 3040.)

¹ Later cases discussing this question appear in the Public Health Reports, Jan. 21, 1916, pp. 141 and 143. The United States Supreme Court, on June 5, 1916, decided that such an indictment was not sufficient. (U. S. v. Jin Fuey Moy, P. H. R., June 16, 1916, p. 1561.)

Registration of pharmacists.—The New York law requiring pharmacists to register annually was held to be valid. (*People v. Roemer*, P. H. R., Oct. 15, 1915, p. 3097.)

Sale of poisons by persons not druggists.—The California law which regulated the sale of certain poisons was construed. (*Ex parte Potter*, P. H. R., June 18, 1915, p. 1851.)

Water for Domestic Use.

Water is a necessity of life, and one who undertakes to trade in it and supply customers is bound to use reasonable care that it shall be ordinarily and reasonably pure and wholesome. (*Jones v. Mt. Holly Water Co.* [N. J.], P. H. R., Sept. 3, 1915, p. 2669.)

Damages for illness caused by impure water.—The Supreme Court of New Jersey decided that a water company which supplied polluted water was liable to a customer for damages resulting from illness caused by the pollution of the water. The circumstances were such that the water company should have known that the water was unsafe. (*Ibid.*)

The water company objected to the verdict on the ground that there was no proof that the water contained typhoid bacilli, but the court held that the jury was justified in finding that the typhoid fever was contracted as a result of drinking the water, there being evidence that for a long time large quantities of fecal and vegetable matter had been discharged into the sources of supply of the water. (*Ibid.*)

Sewage—Disposal of.

Importance of sewerage.—In a thickly populated community nothing is more vital to the preservation of the public health than the establishment of proper and suitable drainage and sewerage. (*Welch v. Cogan* [Md.], P. H. R., Oct. 29, 1915, p. 3241.)

The proper disposal of sewage is of vital importance to cities and towns; and where sewage can be purified and discharged practically free from odor and without seriously contaminating streams, the mere fact that a septic tank near residences would produce mental annoyance or would lessen the value of property ought not to prevent the establishment and operation of such a tank. (*Cardwell v. Austin* [Tex.], P. H. R., Dec. 3, 1915, p. 3575.)

Orders of a board of health must be reasonable.—An order of a State board of health, under authority of a general statute, which order requires a county to install a sewer system covering a specified area, must be reasonable and necessary, and if it can be shown that such order is unreasonable it will be held invalid by the courts. (*Welch v. Cogan* [Md.], P. H. R., Oct. 29, 1915, p. 3241.)

Septic tank not a nuisance if properly planned.—Suit was brought to prevent the erection of a septic tank near the residence of the plaintiff.

The court held that the plans for the proposed tank were defective and that it would be a nuisance. For this reason an injunction was issued prohibiting the erection of the tank as proposed; but the court declined to prohibit the construction of a tank on the proposed location if of proper size and correctly planned, as such a tank would not be a menace to health nor a nuisance. (*Cardwell v. Austin* [Tex.], P. H. R., Dec. 3, 1915, p. 3575.)

In the construction of a septic tank for the purifying of sewage a city must exercise care to build it of such dimensions and character as to prevent the escape of gases and foul odors therefrom in such volume as to create a nuisance to any citizen. (*Cardwell v. Austin* [Tex.], P. H. R., Dec. 3, 1915, p. 3575.)

POLLUTION OF STREAMS BY SEWAGE.

Liability of municipality for pollution of stream.—The pollution of a stream by making it the outlet for a sewage-disposal system constitutes a damage to the land through which it flows for which compensation must be given by a municipality which causes the pollution. (*El Dorado v. Scruggs* [Ark.], P. H. R., Nov. 19, 1915, p. 3439; *Kraver v. Smith* [Ky.], P. H. R., Nov. 5, 1915, p. 3303.)

Right of landowner adjacent to stream.—The owner of land along a natural watercourse is entitled to the natural flow of the water unimpaired in quality except such impairment as may be occasioned by reasonable use of the stream by others. (*Kraver v. Smith* [Ky.], P. H. R., Nov. 5, 1915, p. 3303.)

Injunction against city officers.—The supreme court of Arkansas decided that it is the duty of the commissioners of a sewer district to so construct a sewage-disposal plant that it will not become a nuisance to any neighborhood or to any inhabitant thereof, and city officers will be enjoined from constructing or maintaining a sewage-disposal plant in such manner as to create a nuisance. (*Jones v. Sewer District*, P. H. R., Oct. 22, 1915, p. 3177.)

Long-continued usage does not give right.—The fact that sewage has been discharged into a certain stream for a long time does not justify continuance of the practice when a nuisance is created. (*Kraver v. Smith* [Ky.], P. H. R., Nov. 5, 1915, p. 3303.)

Measure of damages.—The measure of damages to the owner of the land which is injured by pollution of a stream is the difference in its value before and after the sewage was discharged into the stream. (*El Dorado v. Scruggs* [Ark.], P. H. R., Nov. 19, 1915, p. 3439.)

Injury to business distinguished from injury to land.—A dairy business was injured because the customers believed that the milk was impure by reason of the cows drinking from a stream into which a septic tank emptied. The court held that injury to the dairy

business could not be included as one of the elements in determining the amount of damage to his land. (Ibid.)

A municipality is liable for damages caused by improper construction of a sewage-disposal plant.—A city is liable for injury caused by the construction and proper operation of a sewage-disposal plant, including necessary flushing of the septic tank; but the city is not liable for injury caused by the wrongful act of its servants in unnecessarily flushing a septic tank. (Ibid.)

A municipality can control the use of its sewers.—A city has the power to control and regulate its drains and sewers, and a property owner has no right to connect a private sewer with the city sewer without the consent of the municipality. (*Kraver v. Smith* [Ky.], P. H. R., Nov. 5, 1915, p. 3303.)

A municipality is liable for the acts of individuals which it permits.—A city has authority to regulate the character of the sewage which any property owner may discharge into the city sewer, but where a property owner is allowed to make connection with a city sewer and no attempt is made to regulate the character of matter discharged into the sewers, the city is liable for damages caused by the discharge of matter from the city sewers into a stream, creating a nuisance. (Ibid.)

Garbage—Disposal of.

Garbage-reduction plant not a nuisance.—A garbage-reduction plant erected under a contract made by a municipality, the contract being authorized by a statute and the plant operated under municipal supervision and in a proper manner, is not a public nuisance, and the company erecting such a plant can not be prosecuted criminally. (*Toledo Disposal Co. v. State* [Ohio], P. H. R., Nov. 26, 1915, p. 3507.)

Owners of apartment houses required to furnish garbage cans.—A Wisconsin law which required owners of apartment houses, tenement houses, and lodging or boarding houses to provide suitable receptacles for garbage was held to be valid. (*Koeffler v. State*, P. H. R., Sept. 18, 1914, p. 2455.)

ARTIFICIAL PURIFICATION OF OYSTERS.

A REPORT OF EXPERIMENTS UPON THE PURIFICATION OF POLLUTED OYSTERS BY PLACING THEM IN WATER TO WHICH CALCIUM HYPOCHLORITE HAS BEEN ADDED.

By WILLIAM FIRTH WELLS, Sanitary Chemist, United States Public Health Service.

It is generally known that the biological conditions most favorable for the cultivation of oysters are frequently intimately associated with natural agencies of pollution. Depending largely for their food upon substances washed down by rivers, shellfish grow best in bays and estuaries, and in many cases these waters receive the sewage of cities. While it may often be possible to remove the main sources of pollu-

tion, there will still remain many valuable areas where such expense would be unwarranted, or where it would not, for a long time, if ever, be possible to make the beds perfectly safe for the direct removal of oysters for the market. Under these conditions it is believed that the following studies may offer a solution of the problem of the purification of polluted oysters.

Certain facts, discovered in 1914 and 1915 during the progress of experimental studies at the Fisherman's Island laboratory, under the charge of Surg. Hugh S. Cumming, indicated the commercial possibility of artificially purifying polluted oysters. The natural cleansing of oysters when transferred to clean surroundings had been previously demonstrated by several investigators, and confirmed by experience. They variously stated the time requirement to insure thorough purification, agreeing generally upon a week or more. Prof. E. B. Phelps, in experiments at Narragansett Bay, found, however, that even after two days' sojourn in pure water, oysters had become satisfactorily cleansed. He did not study shorter times.

Experiments performed at this station showed that oysters heavily inoculated with *B. coli* freed themselves very rapidly when suspended in baskets placed directly in the tidal current at the mouth of Chesapeake Bay. Within a few hours during the summer months the greater part of the pollution had disappeared, though the last traces required longer periods for removal. Even during the so-called "hibernating" period, a few days in clean water ordinarily sufficed to wash out most of the sewage organisms. It was therefore certain that the purification of oysters could be accomplished in a period so short as to make the suggestion of artificial purification of oysters economically reasonable.

Experimental studies of the oyster physiology, feeding habits, and digestive mechanism explained the rapid disappearance of polluted matter. At feeding temperatures large volumes of water, from 25 to 50 gallons a day, pass through the oyster's gills. The rate at which food materials progress through its gastro-intestinal system is also surprisingly rapid. Feeding experiments showed that in less than half an hour particles touching the gill had moved to the mouth, and that within five hours they were being ejected with the feces. Unlike most animals, an oyster feeds as it breathes, and under favorable conditions a continuous stream of food material flows through the intestinal tract and is deposited in a solid ribbon beneath the oyster. As the total length of the whole passage is about 6 inches, it is not remarkable that so short a time is required in transit.

All indications, therefore, pointed to the active elimination of accumulated pollution and strengthened the conviction that the time required would not be the prohibitive factor in the artificial purification of oysters.

Basins of filtered sea water have been utilized in France for this purpose, but with the present market price of oysters in this country the expense of filtration would make such a method impracticable. However, the successful treatment of public drinking-water supplies with minute traces of calcium hypochlorite suggested a cheap and efficient means of accomplishing the same purpose.

In many places oysters are now kept for varying periods before marketing in basins or floats which, with little alteration in arrangement and at small cost for hypochlorite of lime, could be turned into suitable purification chambers. It is believed, moreover, that aside from the question of economy, water which had not been filtered would be even more effective, since the food particles would assist and hasten the discharge of polluted substances from the gut. Experiments were therefore undertaken to test out the practicability of artificially purifying oysters in water containing calcium hypochlorite.

Technique.

While the experiments were not made upon a commercial scale, all the conditions could be duplicated in practice, and they were in no sense "laboratory" experiments. One of the tanks at the station, having an inside length of 6 feet and a breadth and depth of 4 feet, was available for the purpose. It was filled with water directly from Chesapeake Bay, and in it from 30 to 40 oysters were suspended about 18 inches below the surface, in rectangular galvanized iron wire baskets, about 3 feet long and 18 inches wide and deep. Either liquid cultures of *B. coli* ("free coli") or *B. coli* in finely divided agar suspensions ("attached coli") were used to inoculate the tank. After the oysters had become thoroughly infected samples were collected for examination, and the water was disinfected with from 25 to 150 cubic centimeters of a 10 per cent suspension of commercial calcium hypochlorite. In most cases after about six hours a second dose was added to kill such bacteria as might subsequently have been discharged by the oyster, thus escaping the first treatment. This overcame any possibility that the oysters might have remained closed until the full strength of the hypochlorite had become appreciably diminished.

The mean of three separate tests, made for another purpose, was taken as indicating the initial condition of the oysters. In the first, the *B. coli* content per cubic centimeter of shell liquor of each of the five oysters taken for examination was averaged. In the second, the number of *B. coli* per cubic centimeter of a composite sample of equal volumes of liquor was determined; and, in the third, an analysis was made of the mucus obtained by vigorously shaking the five oyster bodies together. In the quantitative estimation of the number of *B. coli*, suitable dilutions of the material were inoculated into lactose bouillon according to the regular method. Fermentation of the

lactose, with subsequent typical appearance when smeared and grown upon endo medium, was considered a positive test for the organism. In this way a satisfactory index of the number of sewage organisms was obtained, and by using the mean of three independent tests on each sample of five oysters, a better value was obtained than would follow the use of any one of the tests singly.

Results.

The mean results of these tests, together with temperatures, times after dosing, and quantities of available chlorine added to the water in parts per million, are presented in the appended table. They show clearly a remarkable purification within 24 hours and a considerable change when tested after six hours. Whereas most of the initial samples were much more grossly contaminated than oysters usually are when taken from condemned beds, all but one had, after treatment, less than 10 *B. coli* per cubic centimeter, which is the standard set for the conditional approval of oysters by the Rhode Island Shell Fish Commission. The one exceptional case received but a single dose of disinfectant. It should be noted, furthermore, that the index here calculated is more severe than that based merely upon the examination of the shell liquor. With proper adjustment of conditions there is no reason to doubt that the best of these results could be equaled, and probably improved upon, in practice. Longer exposure to the treatment would yield even better results, if such were desirable.

The addition of disinfectant did not seem to interfere with the normal activity of the oysters themselves. Immediately after dosing the tank they appeared to close for a short time. Whether this was due to the effect of the chemical, or was merely the result of the disturbance, can not be definitely stated. Since the decomposition of hypochlorite is quite rapid, however, it was thought advisable to add the second dose, in order to make sure of the destruction of such organisms as might survive within the oyster and be subsequently discharged.

The method is quite analogous to natural purification in pure sea water. It has, however, two advantages, in that the process may be controlled and assured, and that the water need not contain more salt than does that upon the beds from which the oysters were taken, requirements hard to satisfy under natural conditions.

No change in the condition of the oysters could be detected, nor was it possible to distinguish any difference in flavor between the treated and the untreated oysters. Considering the small quantities of hypochlorite used and the general adoption of the hypochlorite method of treating public drinking waters, no undesirable effect would be expected. Sea water normally contains comparatively large amounts of the same chemical salts that result from calcium hypochlorite disintegration.

Conclusion.

The experiments are believed to prove that oysters which have lain in polluted water can be artificially purified to such a degree as to pass a most rigid standard by exposure for a short period in water containing calcium hypochlorite, and they appear also to demonstrate the feasibility of such a process.

Artificial purification of polluted oysters in water treated with calcium hypochlorite.

[Giving mean number of *B. coli* per c. c. in composite and individual shell liquor and composite mucus samples from 5 oysters.]

Inoculation.	Date.	Temperature, degrees.	Initial mean number <i>B. coli</i> per c. c.	Available chlorine added, parts per million.	Hours treated.	Mean number <i>B. coli</i> per c. c.	Available chlorine added, parts per million.	Hours treated.	Mean number <i>B. coli</i> per c. c.
Free coli.....	Aug. 25	27.0 C.	233.0	0.25	9	92.9	.....	.....	.....
Do.....	Aug. 31	24.5 C.	15.8	.25	8	.4	.....	.....	.....
Do.....	Sept. 2	21.0 C.	10.8	.60	.....	.....	.....	29	1.6
Do.....	Sept. 7	25.5 C.	5.4	.63	6	.3	0.25	.....	.1
Do.....	Sept. 16	27.0 C.	447.0	.38	6	.....	.37	.....	.2
Attached coli.....	Aug. 28	24.0 C.	680.0	.38	.....	.....	.....	18	6.8
Do.....	Aug. 31	24.5 C.	3,690.0	.50	5½	169.0	.....	.....	.....
Do.....	Sept. 2	21.0 C.	251.0	.63	4	158.0	.62	24	1.6
Do.....	Sept. 10	26.5 C.	1,000.0	.25	.....	.....	.....	24	13.1
Do.....	Sept. 14	27.5 C.	2,330.0	.25	6	.....	.25	20	4.0
Do.....	Sept. 16	27.0 C.	2,000.0	.33	6	.....	.33	12	1.3

PLAGUE-PREVENTION WORK.**CALIFORNIA.**

The following report of plague-prevention work in California for the week ended June 17, 1916, was received from Senior Surg. Pierce, of the United States Public Health Service, in charge of the work:

SAN FRANCISCO, CAL.**RAT PROOFING.**

New buildings:	
Inspections of work under construction..	205
Basements concreted (square feet, 86,025).....	45
Floors concreted (square feet, 130,925).....	29
Yards, passageways, etc. (square feet, 21,783).....	98
Total area of concrete laid (square feet).....	238,733
Class A, B, and C (fireproof) buildings:	
Inspections made.....	152
Roof and basement ventilators, etc., screened.....	710
Wire screening used (square feet).....	3,950
Openings around pipes, etc., closed with cement.....	1,370
Sidewalk lens lights replaced.....	900
Old buildings:	
Inspections made.....	417
Wooden floors removed.....	62
Yards and passageways, planking removed.....	19
New foundation walls installed (cubic feet).....	8,800
Concrete floors installed (square feet, 15,127).....	25
Basements concreted (square feet, 44,665).....	39
Yards, passageways, etc., concreted (square feet, 18,671).....	70
Total area concrete laid (square feet).....	78,463

SAN FRANCISCO, CAL.—Continued.**RAT PROOFING—continued.**

Old buildings—Continued.	
Floors rat proofed with wire cloth (square feet, 4,910).....	7
Buildings razed.....	29
New garbage cans stamped approved.....	468
Nuisances abated.....	349

OPERATIONS ON THE WATER FRONT.

Vessels inspected for rat guards.....	23
Reinspections made on vessels.....	14
New rat guards procured.....	23
Defective rat guards repaired.....	11
Rats trapped on wharves and water front.....	38
Rats trapped on vessels.....	67
Traps set on wharves and water front.....	127
Traps set on vessels.....	241
Vessels trapped on.....	22
Poisons placed on water front (pieces).....	3,600
Poisons placed within Panama-Pacific International Exposition grounds (pieces).....	23,200
Bait used on water front and vessels, bacon (pieces).....	6
Amount of bread used in poisoning water front (loaves).....	9
Pounds of poison used on water front.....	3

RATS COLLECTED AND EXAMINED FOR PLAGUE.

City.	Col- lected.	Exam- ined.	Infected.
San Francisco.....	164	149	None.
Oakland.....	7	7	None.
Total.....	171	156	None.

RATS IDENTIFIED.

Mus norvegicus.....	47	Mus alexandrinus.....	26
Mus rattus.....	73	Mus musculus.....	18

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE.

County.	Col- lected.	Exam- ined.	Infected.	County.	Col- lected.	Exam- ined.	Infected.
Alameda.....	849	849	1	San Joaquin.....	134	125	None.
Contra Costa.....	667	653	None.	Santa Cruz.....	267	267	None.
San Benito.....	663	613	2	San Mateo.....	275	275	None.
Merced.....	197	197	None.	Sonoma.....	58	58	None.
San Luis Obispo.....	477	477	None.	Monterey.....	43	43	None.
Santa Clara.....	410	392	None.	Total.....	4,259	4,168	3
Stanislaus.....	219	219	None.				

OTHER ANIMALS COLLECTED AND EXAMINED.

Rabbits.....	40
Coyotes.....	1
Weasels.....	1
Total.....	42
Infected.....	None.

RANCHES INSPECTED AND HUNTED OVER.

Alameda.....	69
Contra Costa.....	36
San Benito.....	23
Merced.....	27
San Luis Obispo.....	11
Santa Clara.....	29
Stanislaus.....	25
San Joaquin.....	32
Santa Cruz.....	23
San Mateo.....	12

RANCHES INSPECTED AND HUNTED OVER—Con.

Sonoma.....	7
Monterey.....	7*
Total.....	301

PLAGUE INFECTED SQUIRRELS.

Alameda County:

Shot June 7, 1916. J. A. Mulqueeny Ranch,
12 miles southwest of Midway, N. $\frac{1}{2}$ sec.
12, T. 3 S., R. 3 E..... 1

San Benito County:

Shot May 26, 1916. V. B. Oldham Ranch,
4 miles northwest of Emmet, sec. 28, T.
14 S., R. 7 E..... 1

Shot June 6, 1916. G. Wapple Ranch, sec.
10, T. 14 S., R. 7 E., 5 miles north of
Paicines..... 1

RECORD OF PLAGUE INFECTION.

Place in California.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squir- rel plague.	Total number ro- dents found in- fected since May, 1907.
Cities:				
San Francisco.....	Jan. 30, 1908	Oct. 23, 1908	None.....	398 rats.
Oakland.....	Aug. 9, 1911	Dec. 1, 1908	.....do.....	126 rats.
Berkeley.....	Aug. 28, 1907	None.....	.....do.....	None.
Los Angeles.....	Aug. 11, 1908	.....do.....	Aug. 21, 1908	1 squirrel.
Counties:				
Alameda (exclusive of Oakland and Berkeley).....	Sept. 24, 1909	Oct. 17, 1909, wood rat.	June 7, 1916	291 squirrels, 1 wood rat.
Contra Costa.....	July 13, 1915	None.....	May 30, 1916	1,618 squirrels.
Fresno.....	None.....	.....do.....	Oct. 27, 1911	1 squirrel.
Merced.....	.....do.....	.....do.....	May 12, 1916	7 squirrels.
Monterey.....	.....do.....	.....do.....	May 27, 1916	38 squirrels.
San Benito.....	June 4, 1913	.....do.....	June 6, 1916	64 squirrels.
San Joaquin.....	Sept. 18, 1911	.....do.....	Aug. 26, 1911	18 squirrels.
Santa Clara.....	Aug. 31, 1910	.....do.....	May 30, 1916	31 squirrels.
San Luis Obispo.....	None.....	.....do.....	Jan. 29, 1910	1 squirrel.
Santa Cruz.....	.....do.....	.....do.....	May 30, 1916	5 squirrels.
Stanislaus.....	.....do.....	.....do.....	June 2, 1911	13 squirrels.

The work is being carried on in the following named counties: Alameda, Contra Costa, San Francisco, Stanislaus, San Benito, Monterey, Merced, Santa Clara, San Mateo, Santa Cruz, San Luis Obispo, San Joaquin, Sonoma, Lassen, and Modoc.

WASHINGTON—SEATTLE—PLAGUE ERADICATION.

The following report of plague-eradication work at Seattle for the week ended June 24, 1916, was received from Surg. Boggess, of the United States Public Health Service, in charge of the work:

RAT PROOFING.		WATER FRONT.	
New buildings inspected.....	21	Vessels inspected and histories recorded....	17
New buildings reinspected.....	19	Vessels fumigated.....	3
Basements concreted, new buildings (square feet, 12,275).....	10	Sulphur used, pounds.....	2,960
Floors concreted, new buildings (square feet, 7,250).....	4	New rat guards installed.....	17
Yards, etc., concreted, new buildings (square feet, 2,175).....	3	Defective rat guards repaired.....	26
Sidewalks concreted (square feet).....	11,450	Fumigation certificates issued.....	3
Total concrete laid, new structures (square feet).....	33,150	Port sanitary statements issued.....	42
New buildings elevated.....	4	The usual day and night patrol was maintained to enforce rat guarding and fending.	
New premises rat proofed, concrete.....	14	MISCELLANEOUS WORK.	
Old buildings inspected.....	3	Rat-proofing notices sent to contractors, new buildings.....	17
Premises rat proofed, concrete, old buildings.....	3	Letters sent in re rat complaints.....	6
Floors concreted, old buildings (square feet, 37,250).....	3	Fishing vessels inspected—medicine chests.....	3
Wooden floors removed, old buildings.....	3	RODENTS EXAMINED IN EVERETT.	
Buildings razed.....	2	Mus norvegicus trapped.....	68
LABORATORY AND RODENT OPERATIONS.		Mus musculus trapped.....	6
Dead rodents received.....	4	Total.....	74
Rodents trapped and killed.....	320	Rodents examined for plague infection.....	67
Rodents recovered after fumigation.....	12	Rodents proven plague infected.....	None.
Total.....	336	RAT-PROOFING OPERATIONS IN EVERETT.	
Rodents examined for plague infection.....	262	New buildings inspected.....	3
Rodents proven plague infected.....	None.	New buildings reinspected.....	5
Poison distributed, pounds.....	16	New buildings, concrete foundations.....	2
Bodies examined for plague infection.....	1	New buildings elevated.....	1
Bodies found plague infected.....	None.	New buildings, basements concreted (square feet, 3,132).....	3
CLASSIFICATION OF RODENTS.		New buildings, yards concreted (square feet, 140).....	1
Mus rattus.....	32	Total concrete laid, new buildings (square feet).....	3,272
Mus alexandrinus.....	73	RODENTS EXAMINED IN TACOMA.	
Mus norvegicus.....	187	Mus norvegicus trapped.....	60
Mus musculus.....	43	Rodents examined for plague infection.....	60
Muskrat.....	1	Rodents proven plague infected.....	None.

HAWAII—HILO—PLAGUE PREVENTION.

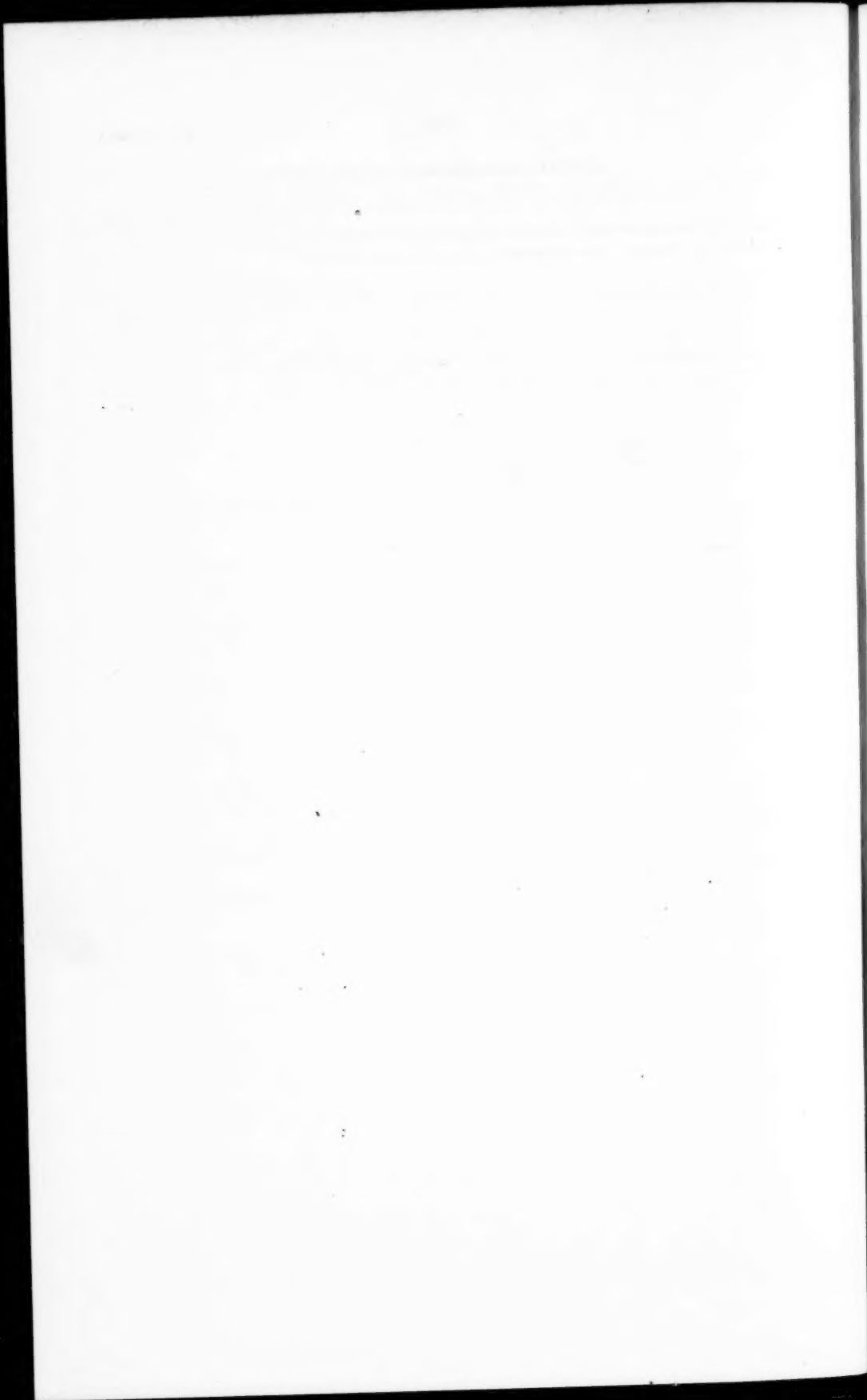
The following report of plague-prevention work at Hilo for the week ended June 10, 1916, was received from Surg. Trotter, of the United States Public Health Service:

Rats and mongoose taken.....	2,560	Classification of rats trapped and found dead:	
Rats trapped.....	2,504	Mus norvegicus.....	818
Mongoose taken.....	56	Mus alexandrinus.....	278
Rats and mongoose examined microscopically.....	2,560	Mus rattus.....	462
Rats and mongoose examined microscopically.....	2	Mus musculus.....	946
Rats and mongoose examined bacteriologically.....	1	Last case of rat plague, Paauhau Sugar Co., Jan. 18, 1916.	
Rats and mongoose plague infected.....	None.	Last case of human plague, Paauhau Sugar Co., Dec. 16, 1915.	

PORTO RICO—PLAGUE PREVENTION.

The following table shows the number of rats and mice examined in Porto Rico for plague infection during the two weeks ended June 23, 1916. No plague infection was found.

Place.	Rats.	Mice.
San Juan.....	111	19
Puerta de Tierra.....	99	1
Santurce.....	147	3



PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

UNITED STATES.

CEREBROSPINAL MENINGITIS.

State Reports for May, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Kansas—Continued.	
Woodruff County	1	Crawford County—	
		Pittsburg	1
Kansas:		Lyon County	1
Barber County	1	Total	4
Bourbon County	1		

City Reports for Week Ended June 24, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Boston, Mass.	4	1	Kansas City, Mo.	1	1
Chicago, Ill.	2	1	Newark, N. J.	1	1
Cleveland, Ohio.	1	2	New Orleans, La.	1	1
Dubuque, Iowa.	1	1	New York, N. Y.	5	4
Fall River, Mass.	1	1	St. Louis, Mo.	1	1
Hartford, Conn.	1	1	Springfield, Ill.	1	1

DIPHTHERIA.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1866.

ERYSIPELAS.

City Reports for Week Ended June 24, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Allentown, Pa.	1	1	Nashville, Tenn.	1	1
Ann Arbor, Mich.	1	1	Newark, N. J.	6	2
Boston, Mass.	4	1	New York, N. Y.	1	1
Bridgeport, Conn.	3	1	Passaic, N. J.	7	4
Buffalo, N. Y.	3	1	Philadelphia, Pa.	11	1
Butte, Mont.	1	2	Pittsburgh, Pa.	2	1
Chicago, Ill.	15	2	Portland, Oreg.	3	1
Cincinnati, Ohio.	2	2	Reading, Pa.	8	1
Cleveland, Ohio.	2	2	Rochester, N. Y.	1	1
Detroit, Mich.	2	2	St. Louis, Mo.	1	1
Erle, Pa.	1	1	St. Paul, Minn.	1	1
Hartford, Conn.	1	1	San Francisco, Cal.	1	1
Los Angeles, Cal.	3	1	Schenectady, N. Y.	1	1
Milwaukee, Wis.	6	1	Seattle, Wash.	3	1
Montclair, N. J.	1	1			

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MALARIA.

State Reports for May, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued.	
Calhoun County.....	22	Phillips County.....	46
Crittenden County.....	15	Polk County.....	3
Dallas County.....	10	Pope County.....	13
Faulkner County.....	7	Saline County.....	3
Franklin County.....	59	Scott County.....	22
Garland County.....	2	Sevier County.....	76
Greene County.....	10	Sharp County.....	1
Hempstead County.....	15	St. Francis County.....	43
Izard County.....	11	Washington County.....	6
Lawrence County.....	1	White County.....	2
Logan County.....	5	Total.....	390
Marion County.....	5		
Monroe County.....	1	Kansas.....	3
Ounchita County.....	8		
Perry County.....	4		

City Reports for Week Ended June 24, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Little Rock, Ark.....	2		Portsmouth, Va.....		1
Mobile, Ala.....	3		Richmond, Va.....	2	
New Orleans, La.....	2	1	Stockton, Cal.....	2	
Newton, Mass.....	1				

MEASLES.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1866.

PELLAGRA.

State Reports for May, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued.	
Bradley County.....	4	Saline County.....	1
Crittenden County.....	4	St. Francis County.....	10
Drew County.....	14	Stene County.....	1
Garland County.....	5	White County.....	1
Greene County.....	2	Woodruff County.....	1
Hempstead County.....	1	Total.....	62
Izard County.....	1		
Monroe County.....	1	Kansas:	
Perry County.....	1	Harper County.....	1
Phillips County.....	14		
Pope County.....	1		

City Reports for Week Ended June 24, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Boston, Mass.....	1		New York, N. Y.....	2	1
Charleston, S. C.....		1	Roanoke, Va.....		1
Chattanooga, Tenn.....		1	Washington, D. C.....	1	1
Cleveland, Ohio.....	21		Wilmington, N. C.....	8	
Mobile, Ala.....	1	1	Worcester, Mass.....		2
Nashville, Tenn.....	20				

PLAGUE.**Louisiana—Gretna—Plague-Infected Rat Found.**

Passed Asst. Surg. Simpson reported that a rat trapped June 1, 1916, at Gretna, La., was proven positive for plague infection June 29, 1916.

Louisiana—New Orleans—Plague-Infected Rats Found.

Passed Asst. Surg. Simpson reported that 7 additional plague-infected rats were found at New Orleans, La., as follows: One trapped June 12, 1916, at 2605 Tchoupitoulas Street, was proven positive June 29; one captured June 17, at 2908 Gravier Street, was proven positive June 30; one captured June 16, at 1525 Dryades Street, positive June 30; one captured May 24, at the Southern Pacific Morgan Warehouse "A," positive June 30; one trapped June 6, at 515 Magazine Street, positive June 30; one trapped June 12, at Melpomene and Broad Streets, positive June 30; and one captured June 15, at 223 Poydras Street, was proven positive June 30, 1916.

PNEUMONIA.**City Reports for Week Ended June 24, 1916.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Binghamton, N. Y.....	7	3	New Castle, Pa.....	1	.....
Braddock, Pa.....	2	.....	Newport, Ky.....	1	1
Chicago, Ill.....	69	28	Pasadena, Cal.....	1	1
Detroit, Mich.....	4	5	Philadelphia, Pa.....	26	14
Dubuque, Iowa.....	1	1	Pittsburgh, Pa.....	7	7
Kalamazoo, Mich.....	3	.....	Rochester, N. Y.....	12	1
Kansas City, Mo.....	1	5	Salt Lake City, Utah.....	23	1
Lancaster, Pa.....	1	.....	San Francisco, Cal.....	13	8
Los Angeles, Cal.....	3	1	Schenectady, N. Y.....	1	.....
Manchester, N. H.....	1	1	Wilkesburg, Pa.....	1	1
Newark, N. J.....	9	.....		

POLIOMYELITIS (INFANTILE PARALYSIS).**Its Present Distribution in the United States.**

In view of the existence of epidemic poliomyelitis in New York City, telegrams were sent to the various State health officers, and also to officers of the Public Health Service stationed throughout the United States, asking whether there were cases of poliomyelitis in their respective localities. The replies received indicate that the disease is not known to be epidemic outside of New York City and that there are comparatively few sporadic cases of which the State or city health departments have record. The following gives the information received regarding the recent occurrence of cases:

Arizona.

State Superintendent of Health R. N. Looney reported July 8, 1916: One case poliomyelitis Mesa, Ariz., in three-year-old child; developed July 1.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.**Arkansas.**

Collaborating Epidemiologist Garrison reported July 7, 1916: Two cases poliomyelitis notified Little River County.

California.

The California State Board of Health reported July 8: Probable poliomyelitis case reported at San Francisco, came from New York few days since. July 10: Two cases poliomyelitis reported from San Francisco, 2 from Los Angeles within last 30 days, 1 suspected case at Weed, Siskiyou County.

San Francisco.—Senior Surg. Williams reported July 7: One case poliomyelitis San Francisco June 5, still in isolation hospital. Senior Surg. Pierce reported July 10: Total number of cases of poliomyelitis to date 3, one from 235 East Seventh Street, New York City, arrived San Francisco June 30.

Connecticut.

The State health officer of Connecticut reported July 7: Connecticut has 3 cases poliomyelitis, Bridgeport, Stamford, New Haven; 1 death Stonington last week.

Georgia.

Rome.—Assist. Surg. Slaughter reported July 10: One case of poliomyelitis reported in Rome, Ga.; white child 2 years of age.

Idaho.

The State health officer of Idaho reported July 10: One case poliomyelitis in Boise.

Illinois.

The State health officer of Illinois reported July 11: Complete report of poliomyelitis situation in Illinois: Confirmed cases—Chicago 6, Blue Island 2, Kankakee 1, Streator 1, Standard 2, Gibson City 1, near Oregon 1, Belleville 4, East St. Louis 4, Quincy 1, Freeport 1, near Cherry 1. Suspected cases—Virden 1, Eureka 1, Maroa 1, Dalton City 1, Decatur 1, Dixon 2, Belleville 1, Granville 1.

Chicago.—Surg. Cobb reported July 12: Health department reports 18 cases poliomyelitis, with 9 deaths, during 1916; 7 cases in July; no deaths, all cases quarantined.

Iowa.

The State health officer reported July 8: Conditions in Iowa no different than usual; few isolated cases poliomyelitis reported.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.**Kansas.**

Collaborating Epidemiologist Crumbine reported July 7: One case poliomyelitis in Cowley County. July 10: Case notified from McPherson.

Kentucky.

Louisville.—Passed Asst. Surg. Herring reported July 11: Three positive cases and one suspicious case poliomyelitis in Louisville.

Louisiana.

Collaborating Epidemiologist Dowling reported July 8: Poliomyelitis New Orleans, May 1, July 2; elsewhere, May 3, June 4.

Maryland.

Collaborating Epidemiologist Fulton reported July 7: Three cases poliomyelitis outside Baltimore since January 1; one suspicious case under observation in Anne Arundel County; one death yesterday in Baltimore, origin Anne Arundel County.

Baltimore.—Surg. Vogel reported July 7: One death poliomyelitis at University Hospital, child 4 years old. July 8: Second case poliomyelitis this morning.

Massachusetts.

Collaborating Epidemiologist Kelley reported July 11: Sixteen cases anterior poliomyelitis to date this month; no immediate danger of epidemic.

Michigan.

The health officer of Michigan reported July 7: Twenty-one cases poliomyelitis reported from 17 counties since January 1; Detroit reports 4 deaths, only 3 cases since June 1.

Detroit.—Senior Surg. Austin reported July 10: One case infantile paralysis reported in Detroit yesterday, origin unknown. July 12: Second case reported to-day.

Minnesota.

Collaborating Epidemiologist Bracken reported July 7: Ten poliomyelitis cases reported to State Board of Health in 1916. January—Anoka County, Bethel, 1; Dakota County, Lakeville Township, 1. March—Todd County, Burnhamville Township, 1. May—Stearns County, St. Cloud, 1. June—Ramsey County, St. Paul, 2; Stearns County, Rockville Township, 1. July—Hennepin County, Minneapolis, 2; Ramsey County, St. Paul, 1.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.**Mississippi.**

Collaborating Epidemiologist Stingily reported July 7: Poliomyelitis in Lawrence County, 10 cases; 12 cases in Simpson County, rural, not confined to any one locality.

Missouri.

St. Louis.—Surg. White reported July 7: One case poliomyelitis, 7 months old infant, reported to-day.

Nebraska.

The State health inspector of Nebraska reported July 11: Two cases poliomyelitis reported in State to date.

New Jersey.

The State health officer of New Jersey reported July 8: Four cases poliomyelitis reported for June; 14 for July.

New York.

The Director of the Division of Communicable Diseases of the State Department of Health of New York reported July 8: 45 cases poliomyelitis in New York State outside of New York City; 24 in June, 21 in July to date. They are distributed as follows: In June—Hudson 11, Beacon 3, North Hempstead 2, Jasper 1, Babylon, 1, Amityville 1, Hornell 1, Kingston 1, Farmingdale 3. In July, to date—Hudson 3, Beacon 1, Farmingdale 2, North Hempstead 2, Yonkers 1, Warwick 1, Copaigue 2, Fishkill 1, Huntington 1, Ardsley 1 (Brooklyn case), Roslyn 1, Glen Cove 1, Phillipstown 1, Albany 2 (Brooklyn cases), Poughkeepsie 1.

New York City.—Surg. Lavinder reported July 13: 117 new cases, 24 deaths; total to date, 1,557 cases, with 311 deaths. Situation about the same.

Ohio.

The State Board of Health of Ohio reported July 8: Thirty-one cases poliomyelitis reported from January 1 to May 31; in June, 4 cases.

Cleveland.—Surg. Holt reported July 8: Four cases of poliomyelitis notified in Cleveland.

Oregon.

The State health officer of Oregon reported July 7: Case poliomyelitis reported Lebanon May 14; case Union reported May 22 not verified yet.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.**Pennsylvania.**

The State health officer of Pennsylvania reported July 8: Two cases Philadelphia, 1 Pittsburgh, 1 South Bethlehem, yesterday; no epidemic Pennsylvania.

Pittsburgh.—Surg. Schereschewsky reported July 8: One case poliomyelitis reported in Pittsburgh; illness began 2 weeks ago; not reported till yesterday. July 10: Additional case poliomyelitis reported this day; total 2 cases.

South Dakota.

The State health officer of South Dakota reported July 7: No case poliomyelitis reported this month; last case reported June 5.

Tennessee.

The State health officer of Tennessee reported July 7: Seven cases poliomyelitis reported in June.

Texas.

The assistant State health officer of Texas reported July 7: One case poliomyelitis reported to-day, Edna, Tex.

Virginia.

The State health commissioner of Virginia reported July 7: One case each infantile paralysis reported Luray, Page County, and Ceres, Bland County.

Washington.

Collaborating Epidemiologist Tuttle reported July 10: One case poliomyelitis reported from Auburn, King County.

West Virginia.

The State health commissioner of West Virginia reported July 7: In March, 1 case each Monongalia and Wood Counties; in April, 1 case each in Monongalia, Taylor, and Wood Counties; none since.

Wisconsin.

The State health officer of Wisconsin reported July 7: Since July 1 4 cases infantile paralysis West Bend, 2 Menasha; 9 cases for June.

City Reports for Week Ended June 24, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Chicago, Ill.....	4	New York, N. Y.....	95	12
Evansville, Ind.....	1	Philadelphia, Pa.....	1
Newark, N. J.....	2	Toledo, Ohio.....	1

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RABIES.

City Reports for Week Ended June 24, 1916.

During the week ended June 24, 1916, there were reported by cities one case of and five deaths from rabies as follows: One case and one death at Mobile, Ala.; three deaths at El Paso, Tex.; and one death at Harrisburg, Pa.

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1866.

SMALLPOX.

Porto Rico.

Surg. King reported, by telegraph, that during the week ended July 2, 1916, additional cases of smallpox were notified as follows: Bayamon, 1; Naranjito, 4; San Juan, 4; Toa Alta, 12.

Kansas Report for May, 1916.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Kansas:						
Allen County.....	1				1	
Brown County.....	10				10	
Butler County.....	2					2
Cherokee County.....	9				4	5
Crawford County.....	9				9	
Pittsburg.....	4					4
Dickinson County.....	4			3		1
Ford County.....	9				2	7
Gove County.....	1				1	
Harper County.....	1				1	
Harvey County.....	1				1	
Hodgeman County.....	1				1	
Jewell County.....	6				6	
Kingman County.....	1		1			
Labette County.....	5				3	2
Parsons.....	14		1		2	11
Lane County.....	2			1	1	
Leavenworth County.....						
Leavenworth.....	1					1
Marshall County.....	4				1	3
Meade County.....	1				1	
Montgomery County.....	3				3	
Coffeyville.....	3				3	
Morris County.....	1				1	
Morton County.....	1					1
Neosho County.....	2					2
Osborne County.....	30				24	6
Pawnee County.....	1					1
Pottawatomie County.....	1					1
Reno County.....	1					1
Rooks County.....	3				1	2
Sedgwick County.....	37		3	1	11	22
Wichita.....	2				2	
Shawnee County.....	5			1	4	
Topeka.....	7			1	4	2
Smith County.....	17				15	2
Stevens County.....	4					4
Sumner County.....	2					2
Wabaunsee County.....	3					3
Wyandotte County.....						
Kansas City.....	21					21
Total.....	290		5	7	112	106

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SMALLPOX—Continued.

City Reports for Week Ended June 24, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Butte, Mont.	2	.....	Oklahoma, Okla.	6	.....
Chicago, Ill.	2	.....	Omaha, Nebr.	2	.....
Coffeyville, Kans.	1	.....	St. Louis, Mo.	1	.....
Detroit, Mich.	20	.....	St. Paul, Minn.	2	.....
Kalamazoo, Mich.	1	.....	San Diego, Cal.	1	.....
Kansas City, Mo.	4	.....	Seattle, Wash.	2	.....
Knoxville, Tenn.	1	.....	Sioux City, Iowa	3	.....
Kokomo, Ind.	1	.....	Springfield, Ill.	2	.....
Lexington, Ky.	2	.....	Springfield, Ohio	1	.....
Muscatine, Iowa.	5	.....	Tacoma, Wash.	1	.....
New Orleans, La.	3	.....	Toledo, Ohio.	8	.....
New York, N. Y.	1	.....	Wichita, Kans.	1	.....

TETANUS.

City Reports for Week Ended June 24, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Allentown, Pa.	1	1	New York, N. Y.	2	1
Chicago, Ill.	1	2	Toledo, Ohio.	.....	.....
New Orleans, La.	.....	2			

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1866.

TYPHOID FEVER.

Tennessee—Memphis.

Senior Surg. White reported, July 8, 1916, that typhoid fever was epidemic in Memphis, Tenn., 95 cases of the disease having been notified since June 1, 1916.

State Reports for May, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Kansas—Continued.	
Bradley County	1	Doniphan County	1
Faulkner County	1	Ellis County	1
Greene County	2	Ellsworth County	1
Izard County	1	Franklin County	6
Logan County	1	Gray County	1
Marion County	2	Greenwood County	2
Pope County	1	Jewell County	2
Pulaski County	2	Labette County	1
Saline County	1	Logan County	1
Sevier County	4	Lyon County	1
Sharp County	1	Miami County	4
St. Francis County	3	Montgomery County	3
Washington County	1	Coffeyville	1
White County	1	Nemaha County	1
Total	22	Neosho County	2
Kansas:		Pawnee County	1
Allen County	1	Reno County	.....
Anderson County	1	Hutchinson	2
Bourbon County	.....	Rice County	1
Fort Scott	1	Riley County	1
Butler County	2	Scott County	1
Chase County	1	Seward County	2
Clark County	1	Shawnee County	1
Coffey County	1	Topeka	1
Cowley County	1	Sumner County	3
Crawford County	1	Wyandotte County—	
Dickinson County	3	Kansas City	2
		Total	56

TYPHOID FEVER—Continued.

City Reports for Week Ended June 24, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Allentown, Pa.	1	—	New Haven, Conn.	4	1
Ann Arbor, Mich.	1	—	New London, Conn.	6	1
Baltimore, Md.	13	3	Newport, R. I.	1	—
Berkeley, Cal.	1	—	Newport, Mass.	1	—
Boston, Mass.	2	—	New York, N. Y.	40	5
Buffalo, N. Y.	1	3	Norfolk, Va.	4	—
Cambridge, Mass.	1	—	Oroville, N. J.	2	—
Camden, N. J.	7	—	Philadelphia, Pa.	11	1
Charleston, S. C.	3	2	Pittsburgh, Pa.	7	2
Chattanooga, Tenn.	11	—	Pittsfield, Mass.	1	—
Chicago, Ill.	16	—	Portsmouth, Va.	2	—
Cleveland, Ohio	3	—	Providence, R. I.	1	—
Columbus, Ohio	15	—	Reading, Pa.	1	—
Detroit, Mich.	6	—	Richmond, Va.	3	—
Elgin, Ill.	3	—	Sacramento, Cal.	1	—
Evansville, Ind.	1	—	Saginaw, Mich.	1	—
Everett, Mass.	1	—	St. Louis, Mo.	2	—
Galveston, Tex.	7	—	Salt Lake City, Utah	1	—
Grand Rapids, Mich.	1	—	San Diego, Cal.	1	—
Hartford, Conn.	—	1	San Francisco, Cal.	4	—
Jersey City, N. J.	1	—	Saratoga Springs, N. Y.	1	—
Kalamazoo, Mich.	1	—	Schenectady, N. Y.	1	—
Knoxville, Tenn.	1	—	South Bend, Ind.	1	—
Kokomo, Ind.	1	—	Springfield, Ill.	2	—
Lancaster, Pa.	1	—	Springfield, Ohio	1	1
Lawrence, Mass.	1	—	Stockton, Cal.	1	—
Little Rock, Ark.	2	—	Tacoma, Wash.	2	—
Los Angeles, Cal.	6	2	Toledo, Ohio	3	1
Lowell, Mass.	1	—	Troy, N. Y.	1	—
Lynchburg, Va.	1	—	Washington, D. C.	4	1
Milwaukee, Wis.	2	1	Wheeling, W. Va.	1	—
Mobile, Ala.	2	—	Wichita, Kan.	1	—
Nashville, Tenn.	15	2	Wilmington, Del.	5	—
Newark, N. J.	1	—	Worcester, Mass.	1	—
New Bedford, Mass.	2	—	York, Pa.	1	—

TYPHUS FEVER.

Texas—Brownsville.

One case of typhus fever was reported at Brownsville, Tex., July 11, 1916.

City Reports for Week Ended June 24, 1916.

During the week ended June 24, 1916, there were reported, by cities, 9 cases and 1 death from typhus fever, as follows: 2 cases at El Paso, Tex., 6 cases at Fall River, Mass., and 1 case at New York, N. Y., and 1 death at El Paso, Tex.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for May, 1916.

During the month of May, 1916, 3 cases of diphtheria, 227 cases of measles, and 14 cases of scarlet fever were reported in Arkansas; 88 cases of diphtheria, 2,821 cases of measles, and 175 cases of scarlet fever were reported in Kansas.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended June 24, 1916.

City.	Popula- tion as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.	584,605	140	5		65		14		44	17
Boston, Mass.	745,139		54	3	320	6	20		51	20
Chicago, Ill.	2,447,045	454	119	15	158	2	153	3	227	67
Cleveland, Ohio.	656,975	151	21	1	77	1	16		47	24
Detroit, Mich.	554,717	166	80	7	20		45	1	50	18
New York, N. Y.	5,468,190	1,311	394	27	676	10	87	3	367	144
Philadelphia, Pa.	1,683,664	408	55	4	163	1	27		124	45
Pittsburgh, Pa.	571,984	145	16	4	153	5	12	1	28	19
St. Louis, Mo.	745,988	155	29	3	119	2	20		26	13
From 300,000 to 500,000 inhab- itants:										
Buffalo, N. Y.	461,335	184	11		6		13		40	18
Cincinnati, Ohio.	406,706	125	12	2	30	1	2		27	13
Jersey City, N. J.	300,133	71	18	1	18	1	18		11	9
Los Angeles, Cal.	465,367	117	3		41		7		53	17
Milwaukee, Wis.	428,062	84	12	1	33		30	1	18	10
Newark, N. J.	399,000	93	22	1	102	1	31		74	12
New Orleans, La.	366,484	149	6		23		2		25	20
San Francisco, Cal.	1,416,912	114	22	1	1		9		19	10
Seattle, Wash.	330,834	52	1		322		2		8	6
Washington, D. C.	358,679		1		128	1	2	1	21	12
From 200,000 to 300,000 inhab- itants:										
Columbus, Ohio.	209,722	71	1		52	1	6		12	7
Kansas City, Mo.	289,879		7	1	35		15		1	7
Portland, Oreg.	272,833	48	1		8		11		3	6
Providence, R. I.	250,025	47	8	2	8	2	14			3
Rochester, N. Y.	250,747	69	5	2	92	2			9	10
St. Paul, Minn.	241,999	51	6	2	50		11		8	9
From 100,000 to 200,000 inhab- itants:										
Bridgeport, Conn.	118,434	38	5		3		1		2	1
Cambridge, Mass.	111,669	21	5		43				7	4
Camden, N. J.	104,349		6		3		2		4	
Fall River, Mass.	126,904	30	3		5		1		8	5
Grand Rapids, Mich.	125,759	19	1		3		10		8	1
Hartford, Conn.	108,969		2		14		2		3	2
Lowell, Mass.	112,121	29	1		99				4	2
Lynn, Mass.	100,316	25							2	
Nashville, Tenn.	115,978	48			11				3	2
New Bedford, Mass.	114,694	34	5	1	18		2		6	2
New Haven, Conn.	147,095		1		14	1	2		2	1
Oakland, Cal.	190,803		4	1	3		5		2	2
Omaha, Nebr.	103,094	42	1		9		7	1		5
Reading, Pa.	154,674	26			3		2		3	
Richmond, Va.	113,567	55	2		120	2	4		2	7
Salt Lake City, Utah.	103,216	15	1		133		9		1	1
Springfield, Mass.	152,534	27	7		20			1	1	2
Syracuse, N. Y.	108,094	37	20	1	36		2		10	3
Tacoma, Wash.	187,840	3	3		27				3	
Toledo, Ohio.	109,212	57	8		16		23		6	11
Trenton, N. J.	160,523	40	5		1		1		7	6
Worcester, Mass.		53	7	1	37	2	1		3	1
From 50,000 to 100,000 inhab- itants:										
Allentown, Pa.	61,901	21	6		5					
Atlantic City, N. J.	55,806	6			11		2		1	
Bayonne, N. J.	67,582		1		9		2		6	
Berkeley, Cal.	54,879	6					5			
Binghamton, N. Y.	53,082	28			31	1			1	
Brockton, Mass.	65,746	15	2		17	1			2	1
Canton, Ohio.	59,139	11			4				2	1
Charleston, S. C.	60,427	23			9				3	3
Chattanooga, Tenn.	58,576	22					4			
Covington, Ky.	56,520	16	3				1		2	3
Duluth, Minn.	91,913		2							
El Paso, Tex.	51,936	55	1		2		2			8
Erie, Pa.	73,798	29			32	1			1	1
Evansville, Ind.	72,125	14			1				4	4
Harrisburg, Pa.	70,754	22	2		6					3
Hoboken, N. J.	70,104	19	2	1	20		9		6	

1 Population Apr. 15, 1910; no estimate made.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended June 24, 1916—Continued.

City.	Popula- tion as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabit- ants—Continued.										
Johnstown, Pa.	66,583	30	1		3	1	1			4
Lancaster, Pa.	50,269				41				1	
Lawrence, Mass.	98,197	24	2		11		3			
Little Rock, Ark.	55,158	21			1					
Malden, Mass.	50,067				23				3	2
Manchester, N. H.	76,959	20	1		3		2		2	2
Mobile, Ala.	56,536	23			1				8	2
Norfolk, Va.	88,076				11				5	5
Oklahoma, Okla.	88,158	13			10		1		2	2
Passaic, N. J.	69,010	13	2		1		1		2	1
Pawtucket, R. I.	58,156	13	5							1
Rockford, Ill.	53,761	16	1		2		2			
Sacramento, Cal.	64,806	16	1						2	1
Saginaw, Mich.	54,815	15	1		4		1		2	2
San Diego, Cal.	51,115	21	2		8				4	2
Schenectady, N. Y.	95,265	17			9		7		1	1
Sioux City, Iowa.	55,588		1	1			3			
Somerville, Mass.	85,460	14	1		3		2		2	3
South Bend, Ind.	67,030	22	2		11		3			
Springfield, Ill.	59,468	19	1		4		1			
Springfield, Ohio.	50,804	12			1		1		3	1
Troy, N. Y.	77,738		1		16		2		5	7
Wichita, Kans.	67,847				1		4			
Wilkes-Barre, Pa.	75,218	15	1		7		1			
Wilmington, Del.	93,161		1	1	3					
York, Pa.	50,543				2				2	
From 25,000 to 50,000 inhabit- ants:										
Alameda, Cal.	27,031	6								
Auburn, N. Y.	36,947	14			28			1	2	
Brookline, Mass.	31,934	3	1		4					
Butler, Pa.	26,587	6			10					
Butte, Mont.	42,918	29	1	1	4				3	7
Chelsea, Mass.	32,452	16	1		1		3		4	1
Chicopee, Mass.	28,688	6	1		16		3	1	1	1
Cumberland, Md.	25,564	3			4					
Danville, Ill.	31,554	7							4	1
Davenport, Iowa.	47,127		3		1		3			
Dubuque, Iowa.	39,650		1		5		2		1	1
East Orange, N. J.	41,155	4			26		2			
Elgin, Ill.	27,844	4	1							
Everett, Mass.	38,307	5	1		2				2	1
Everett, Wash.	33,767	8			10		1			4
Fitchburg, Mass.	41,144	13	2	1	26		1		4	
Galveston, Tex.	41,076	12								1
Haverhill, Mass.	47,774	12	4	1	4		2		4	3
Kalamazoo, Mich.	47,304	9			16		1		1	
Kenosha, Wis.	30,319	10			39	1				
Knoxville, Tenn.	38,300				5				3	
La Crosse, Wis.	31,522	12	1							2
Lexington, Ky.	39,703	16	1						1	2
Lincoln, Nebr.	46,028		4	1	2		2		2	1
Lorain, Ohio.	35,662		1		4		1			
Lynchburg, Va.	32,385	6			2				3	1
Medford, Mass.	25,737	7			3		1		1	1
Montclair, N. J.	25,550	3	1		11				3	2
New Castle, Pa.	40,351	2	1		12					
Newport, Ky.	31,722	12					3		1	1
Newport, R. I.	29,631	2								
Newton, Mass.	43,085	7			24		1			
Niagara Falls, N. Y.	36,240	17			11					1
Norristown, Pa.	30,833	9	1							
Ogden, Utah.	30,466	4	2		2		3			
Orange, N. J.	32,524	8			15				3	
Pasadena, Cal.	43,859	11	1		2		1		8	2
Pittsfield, Mass.	37,580	10	1				1			1
Portsmouth, Va.	38,610	14	1							
Racine, Wis.	45,507		1		7		1			

¹ Population Apr. 15, 1910; no estimate made.

DIPHtheria, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended June 24, 1916—Continued.

City.	Popula- tion as of July 1, 1915 estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 25,000 to 50,000 inhabitants—Continued.										
Roanoke, Va.	41,925	12			32				1	2
San Jose, Cal.	37,994	7							1	
Steubenville, Ohio.	26,631	8								
Stockton, Cal.	34,508	7	4						1	1
Superior, Wis.	45,285	7	2		3					1
Taunton, Mass.	35,957	15	1	1	1				1	1
Waltham, Mass.	30,129	7			7				1	
West Hoboken, N. J.	41,893	5	1		2		1		3	2
Wheeling, W. Va.	43,097	7			3					
Williamsport, Pa.	33,495		1							
Wilmington, N. C.	28,264	10			1				1	1
Zanesville, Ohio.	30,406	7								
From 10,000 to 25,000 inhabitants:										
Ann Arbor, Mich.	14,979	12							1	
Braddock, Pa.	21,310				3				2	
Cairo, Ill.	15,593	3								1
Clinton, Mass.	¹ 13,075	3			3		2		2	
Coffeyville, Kans.	16,765				1					
Concord, N. H.	22,480	9								
Galesburg, Ill.	23,923	5			49	1				
Kearny, N. J.	22,753	7			16					2
Kokomo, Ind.	20,312	2			1				1	
Long Branch, N. J.	15,057	3			1					
Marinette, Wis.	¹ 14,610				22					
Melrose, Mass.	17,166	5								
Morristown, N. J.	13,158	2			19					
Nanticoke, Pa.	22,441	4					1			
Newburyport, Mass.	15,195	6					1			
New London, Conn.	20,771	5	1		18				1	
Northampton, Mass.	19,846	5			11		1		1	1
Plainfield, N. J.	23,280	8	1		2				1	
Rutland, Vt.	14,624	4			1		2			
Sandusky, Ohio.	20,160		1		23					
Saratoga Springs, N. Y.	12,842	7			1				4	1
Steelton, Pa.	15,337	3							2	
Wilkinsburg, Pa.	22,361	8			1					
Woburn, Mass.	15,862	12								

¹ Population Apr. 15, 1910; no estimate made.

FOREIGN.

CHINA.

Examination of Rats—Hongkong.

During the week ended May 20, 1916,¹ 2,054 rats were examined at Hongkong. No plague infection was found.

The last plague-infected rat at Hongkong was found during the week ended February 26, 1916.

Quarantine Restrictions Against Hongkong.

According to information dated May 22, 1916, quarantine restrictions against arrivals from Hongkong have been put in force at ports in the Dutch East Indies and Burmah.

Examination of Rats—Shanghai.

During the week ended June 3, 1916, 246 rats were examined at Shanghai. No plague infection was found.

The last plague-infected rat at Shanghai was found during the week ended May 6, 1916.

CUBA.

Communicable Diseases—Habana.

Communicable diseases were notified at Habana during the 10-day period ended June 20, 1916, as follows:

Disease.	New cases.	Deaths.	Remaining under treatment June 20, 1916.
Cerebrospinal meningitis.....	1	2	.....
Diphtheria.....	8	.....	9
Leprosy.....	.....	.....	246
Malaria.....	1	.....	3
Measles.....	26	.....	25
Paratyphoid fever.....	.....	.....	4
Scarlet fever.....	1	.....	4
Typhoid fever.....	18	5	45
Varicella.....	2	.....	7

GREAT BRITAIN.

Examination of Rats—Liverpool.

During the two weeks ended June 17, 1916, 394 rats were examined at Liverpool. No plague infection was found.

¹ Reports for period from Feb. 26 to May 14, 1916, not received.

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER.

Reports Received During Week Ended July 14, 1916.¹

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Ceylon:				
Colombo.....	May 7-13.....	5		
India:				
Bombay.....	May 14-20.....		1	
Calcutta.....	May 7-13.....		36	
Indo-China:				
Saigon.....	May 14-21.....	4	1	
Persia:				
Foumen.....	May 9.....	3	2	Previously erroneously included in cases at Recht.
Recht.....	June 2-3.....	3	3	
Philippine Islands:				
Manila.....	May 21-27.....	17	5	
Provinces—				
Laguna.....	May 21-June 10...	14	7	
Lanac.....	May 23-June 3.....	110	83	
Mindoro.....	May 21-27.....	7	7	
Rizal.....	May 21-June 10...	6	5	
Siam:				
Bangkok.....	May 15-27.....	4	4	

PLAGUE.

Ceylon:				
Colombo.....	Apr. 30-May 6....	3	3	
Chile:				
Antofagasta.....	June 4-10.....	1		
China:				
Hongkong.....	May 7-27.....	3	3	
Egypt:				
Alexandria.....	May 26-June 8.....	18	12	Jan. 1-June 8, 1916: Cases, 1,520; deaths, 747.
Port Said.....	May 23-June 2.....	2	2	
Provinces—				
Assiout.....	May 27-June 8.....	8	7	
Beni-Souef.....	May 26-June 7.....	18	8	
Payoum.....	May 26-June 8.....	81	34	
Girgeh.....	June 7.....	1		
Minieh.....	May 29-June 6.....	10	6	
India:				
Bassein.....	May 7-13.....		28	May 7-13, 1916: Cases, 1,503; deaths, 1,138.
Bombay.....	May 14-20.....	93	85	
Calcutta.....	May 7-13.....		2	
Karachi.....	May 14-20.....	27	18	
Madras Presidency.....	do.....	32	21	
Mandalay.....	do.....		1	
Moulmein.....	May 7-13.....		8	
Rangoon.....	Apr. 23-May 13....	108	101	
Indo-China:				
Saigon.....	May 15-21.....	8	4	
Mauritius.....	Apr. 13.....	1		
Siam:				
Bangkok.....	May 17-30.....	22	18	
Straits Settlements:				
Singapore.....	Apr. 30-May 6....	1		

SMALLPOX.

Austria-Hungary:				
Austria—				
Vienna.....	May 27-June 10...	3	1	
Hungary—				
Budapest.....	May 21-June 10...	22	12	
Canada:				
Toronto.....	June 25-July 1....	2		
Ceylon:				
Colombo.....	May 7-13.....	1		
China:				
Harbin.....	May 2-8.....	2		
Hongkong.....	May 7-27.....	41	29	
Tientsin.....	May 14-20.....	16	2	

¹ From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER—Continued.**Reports Received During Week Ended July 14, 1916—Continued.****SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Egypt:				
Alexandria.....	May 28-June 3....	1		
Cairo.....	Jan. 22-28.....	1		
Great Britain:				
Cardiff.....	June 11-17.....		1	
India:				
Bassein.....	May 7-13.....		2	
Bombay.....	May 14-20.....	51	17	
Calcutta.....	May 7-13.....		1	
Madras.....	May 14-30.....	20	5	
Rangoon.....	Apr. 23-May 13....	93	17	
Japan:				
Kobe.....	June 5-11.....	9	1	
Mexico:				
Aguascalientes.....	June 19-25.....		11	
Mazatlan.....	May 31-June 6.....		4	
Philippine Islands:				
Manila.....	May 28-June 3.....	1		
Porto Rico:				
Bayamon.....	June 26-July 2.....	1		
Naranjito.....	do.....	4		
San Juan.....	do.....	4		
Toa Alta.....	do.....	12		
Siam:				
Bangkok.....	May 24-30.....	2		
Straits Settlements:				
Singapore.....	Apr. 30-May 6....	2	1	
Switzerland:				
Basel.....	May 13-June 3....	14		

TYPHUS FEVER.

Austria-Hungary:				
Hungary—				
Budapest.....	May 21-June 10....	13		
China:				
Harbin.....	May 2-8.....	1		
Tientsin.....	May 14-20.....		1	
Egypt:				
Alexandria.....	May 21-June 3.....	86	55	
Cairo.....	Jan. 8-28.....	15	6	
Mexico:				
Aguascalientes.....	June 19-25.....		14	
Switzerland:				
Geneva.....	May 21-27.....	1		
Turkey in Asia:				
Adana.....	May 13.....			Present.
Haifa.....	Apr. 24-30.....	5	1	
Jaffa.....	Apr. 23-29.....			Do.
Mersina.....	May 7-13.....	5		
Tarsus.....	May 13.....			Do.

Reports Received from July 1 to 7, 1916.¹**CHOLERA.**

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein.....	Apr. 23-29.....		1	
Henzada.....	do.....		2	
Indo-China:				
Provinces—				
Anam.....	Dec. 1-31.....	493	388	Dec. 1-31, 1915: Cases, 510; deaths, 395. Jan. 1-Feb. 29, 1916: Cases 1,332; deaths, 762.
Do.....	Jan. 1-Feb. 29.....	1,295	738	
Cambodia.....	do.....	11	10	
Cochin China.....	do.....	6	1	
Tonkin.....	Dec. 1-31.....	17	7	
Do.....	Jan. 1-Feb. 29.....	20	13	
Saigon.....	May 1-14.....	35	2	

¹ For reports received from Jan. 1 to June 30, 1916, see Public Health Reports for June 30, 1916. The tables of epidemic diseases are terminated semiannually and new tables begun.

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER—Continued.**Reports Received from July 1 to 7, 1916—Continued.****CHOLERA—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Java.....				West Java: Apr. 13-19, 1916: Cases, 17; deaths, 14.
Batavia.....	Apr. 13-19.....	17	14	
Philippine Islands:				
Manila.....	May 14-20.....	9	11	Not previously reported: Cases, 3; deaths, 1.
Provinces.....				May 1-27, 1916: Cases, 12; deaths, 10.

PLAGUE.

Chile:				
Mejillones.....	May 28-June 3....	1		
India:				
Bassein.....	Apr. 23-29.....		47	
Henzada.....	do.....		3	
Moulmein.....	do.....		13	
Prome.....	do.....		1	
Indo-China.....				Dec. 1-31, 1915: Cases, 90; deaths, 70. Jan. 1-Feb. 29, 1916: Cases, 205; deaths, 153.
Provinces—				
Anam.....	Dec. 1-31.....	36	20	
Do.....	Jan. 1-Feb. 29....	79	62	
Cambodia.....	Dec. 1-31.....	27	36	
Do.....	Jan. 1-Feb. 29....	77	71	
Cochin China.....	Dec. 1-31.....	4	1	
Do.....	Jan. 1-Feb. 29....	49	20	
Tonkin.....	Dec. 1-31.....	23	23	
Siam:				
Bangkok.....	Apr. 30-May 6....	10	10	

SMALLPOX.

Austria-Hungary:				
Austria.....				Feb. 13-19, 1916: Cases, 1,536.
Brazil:				
Santos.....	May 8-14.....		1	
China:				
Antung.....	May 22-28.....	2		
Darien.....	May 21-27.....	1		
Chungking.....	May 7-13.....			Present.
Foochow.....	do.....			Do.
Tientsin.....	do.....	7	2	
Germany:				
Breslau.....	May 21-27.....	1		
Great Britain:				
Cardiff.....	June 4-10.....	1		
London.....	do.....	1		
Indo-China.....				Dec. 1-31, 1915: Cases, 74; deaths, 14. Jan. 1-Feb. 29, 1916: Cases, 134; deaths, 16.
Provinces—				
Anam.....	Dec. 1-31.....	48		
Do.....	Jan. 1-Feb. 29....	24		
Cambodia.....	Dec. 1-31.....	19	13	
Do.....	Jan. 1-Feb. 29....	37	14	
Cochin China.....	Dec. 1-31.....	1	1	
Do.....	Feb. 1-29.....	10		
Tonkin.....	Dec. 1-31.....	6		
Do.....	Jan. 1-Feb. 29....	63	2	
Japan:				
Kobe.....	May 29-June 4....	12	2	
Java.....				Mid-Java, Apr. 1-7, 1916: Cases, 9; deaths, 2. West Java, Apr. 13-19, 1916: Cases, 23; deaths, 4.
Batavia.....	Apr. 13-19.....	1	1	
Mexico:				
Aguascalientes.....	June 12-18.....		10	
Frontera.....	May 28-June 10....	4	1	
Guadalajara.....	June 11-17.....	35	9	
Tenosique.....	June 14.....			175 miles south of Frontera. Epi-
Vera Cruz.....	June 4-11.....		4	demic among troops.
Porto Rico.....				June 19-25, 1916: Cases, 33.
Agua Buenas.....	June 19-25.....	5		
Arecibo.....	do.....	2		
Bayamon.....	do.....	1		
Rio Piedras.....	do.....	1		
San Juan.....	do.....	24		
Portugal:				
Lisbon.....	May 21-June 3....	4		
Russia:				
Riga.....	Apr. 6-12.....	1		

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CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER—Continued.

Reports Received from July 1 to 7, 1916—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Austria.....				Feb. 13-26, 1916: Cases, 845. Feb. 21-Mar. 5, 1916: Cases, 35; deaths, 7.
Hungary.....				
Germany:				
Chemnitz.....	May 28-June 3.....		1	
Hanover.....	May 7-13.....	2		
Greece:				
Salonika.....	May 1-7.....		4	
Japan:				
Tokyo.....	May 22-June 4.....	39		Jan. 1-June 4, 1916: Cases, 391.
Java:				Mid-Java, Apr. 1-7, 1916: Cases,
Batavia.....	Apr. 13-19.....	2	1	8; deaths, 2. West Java, Apr.
Samarang.....	Apr. 1-7.....		1	13-19, 1916: Cases, 2; deaths, 1.
Mexico:				
Aguascalientes.....	June 12-18.....		12	
Guadalajara.....	June 11-17.....	4	1	
Vera Cruz.....	June 4-11.....		1	

SANITARY LEGISLATION.

COURT DECISIONS.

KANSAS SUPREME COURT.

Health Authorities—City Not Liable for Negligence in the Maintenance of an Isolation Hospital.

BUTLER v. KANSAS CITY. (Feb. 12, 1916.)

The duty of a municipal corporation to conserve the public health is governmental, and it is not liable for injuries inflicted while performing such duty.

A patient in a municipal isolation hospital contracted blood poisoning in a wound caused by getting a splinter from the floor in his foot. He sued the municipality, but the court decided that the municipality was not liable.

[155 Pacific Reporter, 12.]

PORTER, J.: John Butler sued the city of Kansas City to recover damages for personal injuries alleged to have been caused by the city's negligence. The city maintains a pesthouse where persons affected with smallpox are taken for isolation and treatment. The petition alleged that Butler became sick with smallpox and was taken by employees of the city and confined in one of the rooms or wards of the pesthouse, where each morning he was obliged to start a fire, and that blood poisoning resulted from a splinter of the flooring which entered his bare foot as he walked from the bed to the stove. The petition alleged that the city was negligent in maintaining the floor of the room in a defective and dangerous condition. A demurrer to the petition was overruled. The city elected to stand upon the demurrer and has appealed.

The contention of the city is that in maintaining a pesthouse it was performing a governmental duty under the police power of the State, and therefore can not be held liable for negligence causing injuries to persons who were in the pesthouse for treatment and isolation while affected with smallpox.

On the same principle, a similar immunity from liability has been held to exist in a case where a county is sued by an inmate of a jail for injuries resulting from negligence in the manner in which the jail was maintained. *Pfefferle v. Commissioners of Lyon County* (39 Kans., 432; 18 Pac., 506). The decision in that case was placed upon the ground that, in respect to persons committed to its custody, the county was engaged in the performance of a governmental duty for the benefit of the State and possessed the same immunity as the State.

In *Thomas v. Ellis* (91 Kans., 443; 138 Pac., 409) it was said:

Counties are mere auxiliary agencies of the State government and, like the State, are immune from liability on account of damages occasioned by the manner in which they exercise or fail to exercise their governmental powers. [Syl.]

See *State v. Lawrence* (79 Kans., 234, 250; 100 Pac., 485).

The same doctrine was applied in a case of malicious prosecution. *City of Caldwell v. Prunelle* (57 Kans., 511, 513; 46 Pac., 949, 950). It was there held that in enforcing a

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police regulation the officers of the city were exercising a public and governmental function. In the opinion it was said:

For the manner in which they exercise their powers and duties in this respect the city is not liable.

The case of *Edson v. Olathe* (81 Kans., 328; 105 Pac., 521; 36 L. R. A. (N. S.), 861), rehearing denied (82 Kans., 4; 107 Pac., 539; 36 L. R. A. (N. S.), 865), recognized the distinction between the governmental and proprietary functions of municipal corporations generally, and as affecting property and contract rights. See authorities cited in opinion. Another case more nearly in point as to the facts, and in which the controlling question was the distinction between the liability of a city for an act done by it in its public capacity as a part of the political subdivisions of the State, and its liability for an act done to its private advantage in relation to which the State at large has no interest, is *La Clef v. City of Concordia* (41 Kans., 323; 21 Pac., 272; 13 Am. St. Rep., 285). There the plaintiff brought an action to recover damages to his health by the negligent condition of a jail in which he was confined for the violation of a city ordinance. It was held that the city in maintaining the jail stands in the same attitude as counties and is not liable for injuries resulting from the enforcement of public laws affecting the State at large.

It is a general rule that the governmental agencies of the State are not liable in an action of tort for either nonfeasance or misfeasance. *Fowle v. Common Council of Alexandria* (3 Pet., 398; 7 L. Ed., 719); *Maxmilian v. Mayor* (62 N. Y., 160, 164, 165; 20 Am. Rep., 468). Judge Dillon states the law as follows:

The power or even duty on the part of a municipal corporation to make provision for the public health and for the care of the sick and destitute appertains to it in its governmental or public, and not in its corporate, or, as it is sometimes called, private, capacity. And therefore where a city, under its charter, and the general law of the State enacted to prevent the spread of contagious diseases, establishes a hospital, it is not responsible to persons injured by reason of the misconduct of its agents and employees therein. [4 Dillon's Municipal Corporations (5th Ed.), sec. 1661.]

Among the cases cited in the notes which are directly in point, see *Evans v. Kanakee* (231 Ill., 223; 83 N. E., 223; 13 L. R. A. (N. S.), 1190); *Sherbourne v. Yuba County* (21 Cal., 113; 81 Am. Dec., 151); *Summers v. Daviess County* (103 Ind., 262; 2 N. E., 725; 53 Am. Rep., 512); *City of Richmond v. Long's Adm'rs* (17 Grat. (Va.), 375; 94 Am. Dec., 461); *Murtaugh v. St. Louis* (44 Mo., 479).

In *Barbour v. Ellsworth* (67 Me., 294), a well person was taken to a hospital for smallpox, where he contracted the disease. Alleging that he had not been suitably or sufficiently cared for, he sued the city for damages, and it was held there was no liability. In *Lynch v. North Yakima* (37 Wash., 657; 80 Pac., 79; 12 L. R. A. (N. S.), 261), it was held that the city was not liable for the act of a policeman who took a person exposed to smallpox into a building occupied by the fire department, thereby exposing the employees to contagion.

The duty of a municipal corporation to conserve the public health is governmental, and it is not liable for injuries inflicted while performing such duty. [6 McQuillin's Municipal Corporations, sec. 2669.]

The petition failed to state a cause of action against the city, and the judgment is reversed, with directions to sustain the demurrer. All the justices concurring.

MASSACHUSETTS SUPREME JUDICIAL COURT.

Heart Disease and the Massachusetts Workmen's Compensation Law.

In re MADDEN. (Feb. 7, 1916.)

The Massachusetts workmen's compensation law does not provide for compensation for occupational diseases as such. "Personal injury" is the only ground for compensation. But whatever is rightly described as a "personal injury" if received in the course of and arising out of the employment becomes the basis for a claim.

The fact that an employee is suffering from a disease does not bar the right to compensation even though the injury would not have occurred had the employee been in good health; but the injury must be one which arises out of and in the course of the employment.

Under the Massachusetts workmen's compensation law an employee who has a weak heart and whose work requires exertion which so aggravates and accelerates the disease as to incapacitate her is entitled to compensation.

Mrs. Honora E. Madden was employed at work which required the pulling of heavy carpet over a table. She stated that one morning she "felt something give" and had "an awful pain under her heart," but she continued at work. Later she "felt something else give way," and she was taken to the hospital. The Industrial Accident Board found that "the work which Mrs. Madden was doing on the day on which the injury was received so aggravated and accelerated a weak heart condition as to incapacitate her for work." The board decided that Mrs. Madden was entitled to compensation under the Massachusetts workmen's compensation law, and the court affirmed the award.

In the opinion Chief Justice Rugg said:

* * * * *

[111 Northeastern Reporter, 379.]

"The standard established * * * by our workmen's compensation act as the ground for compensation is simply the receiving of 'personal injury arising out of and in the course of' the employment. This standard is materially different from that of the English act and of the acts of some of the States of this Nation. That standard is 'personal injury by accident,' both in the act of 1897 and 1906.

* * * * *

"The 'personal injury by accident' which by the English act is made the prerequisite for the award of financial relief, is narrower in its scope than the simple 'personal injury' of our act.

* * * * *

"An illustration of the difference between 'personal injury' and 'personal injury by accident' put by Lord Reading, the present Chief Justice of England, in the case last cited [Trim Joint District School Board v. Kelly, 1914 A. C., 667, 679] at page 720, is apposite in this connection:

"For example, if a workman became blind in consequence of an explosion at the factory, that would constitute an injury by accident; but if in consequence of the nature of his employment his sight was gradually impaired and eventually he became blind, that would be an injury, but not an injury by accident.

* * * * *

"Although the Ohio act in this respect is similar to ours, the history and terms of the Ohio constitutional amendment touching the subject, and of the governing statute and construction placed upon it by the administrative board, led to an interpretation of intent to restrict the operation of that act to personal injuries by accident by a chain of reasoning which has no relevancy to our act. Industrial Commission of Ohio v. Brown (91 Ohio, —; 110 N. E., 744). [Public Health Reports, May 19, 1916, p. 1269.]

* * * * *

"Varying facts may give rise to questions of difficulty. In this connection it is to be noted that there is no explicit provision for compensation for occupational disease as such. 'Personal injury' is the only ground for compensation. The legislative

principle declared by the workmen's compensation act, to the test of which all cases arising under it must be subjected, is that whatever rightly is describable as a 'personal injury,' if received 'in the course of and arising out of' the employment, becomes the basis for a claim.

* * * * *

"Without undertaking to define 'personal injury' or to go beyond the requirements of the facts here presented, it is enough to say that the occurrence described by the defendant when she said she 'felt something give' and 'felt something else give way,' accompanied by the symptoms of angina pectoris, may have been found to be a 'personal injury.'

"That injury also may have been found to have arisen out of the employment. The pulling of the carpet, although not requiring such putting forth of muscular power as would have affected a healthy person, yet may have been enough to cause the injury which the employee suffered. It could have been regarded as resulting from the work as a contributing proximate cause.

* * * * *

"It is the injury arising out of the employment and not out of disease of the employee for which compensation is to be made. Yet it is the hazard of the employment acting upon the particular employee in his condition of health and not what that hazard would be if acting upon a healthy employee or upon the average employee. The act makes no distinction between wise or foolish, skilled or inexperienced, healthy or diseased employees. All who rightly are describable as employees come within the act.

* * * * *

"A high degree of discrimination must be exercised to determine whether the real cause of an injury is disease or the hazard of the employment. A disease which under any rational work is likely to progress so as finally to disable the employee does not become a 'personal injury' under the act merely because it reaches the point of disablement while work for a subscriber is being pursued. It is only when there is a direct causal connection between the exertion of the employment and the injury that an award of compensation can be made. The substantial question is whether the diseased condition was the cause, or whether the employment was a proximate contributing cause. In the former case, no award can be made; in the latter, it ought to be made. This in substance is the test stated in McNichol's Case, 215 Mass., 497, 499; 102 N. E., 697. * * * This point is governed by Brightman's Case (220 Mass., 17; 107 N. E., 527). [Public Health Reports, May 14, 1915, p. 1455.]

* * * * *

"It was competent for the industrial accident board to find that the employee had received a 'personal injury in the course of and arising out of' her 'employment,' according to the true meaning of those words in the workmen's compensation act."

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

VERMONT.

Poliomyelitis—Control of—Quarantine of Children from New York City. (Reg. Bd. of H., July 6, 1916.)

1. No child under the age of 15 years shall reside in this State for a period of more than 24 hours without being reported by an attendant, parent, or guardian to the health officer of the town or city where such child is, provided such child has been in the city of Greater New York since the 20th of June, 1916.

2. It shall be the duty of every housekeeper, manager, or proprietor of every hotel or boarding house where such child is domiciled to immediately report such child, giving the name and age, to the health officer of his city or town.

3. Every such child shall be subjected to quarantine for a period of two weeks from the time such child was last in the city of Greater New York.

4. The health officer of every town and city to whom such a child is reported shall immediately serve a written notice upon the head of the family in which such child is. This written notice shall contain a copy of these regulations and an order signed by such health officer requiring such child to remain on the premises in which it is at that time for the specified time of two weeks after last leaving the city of Greater New York.

5. Each health officer to whom such child is reported shall require of the attendant, parent, or guardian of such child a certificate in writing, duly signed by a legal practitioner of medicine, certifying that the nose and throat of such child has been thoroughly washed with a solution of a teaspoonful of common salt in a pint of water once a day for a period of three consecutive days before the premises are released from quarantine.

6. No child under 15 years of age shall enter any house so quarantined.

7. A placard containing the word "quarantine" shall be sufficient evidence to all persons that the premises are quarantined for the purpose of these regulations.

Nothing in these regulations shall be construed to prevent other members of a household in which there is a child as above described, who has left the city of New York since June 20, 1916, from attending to their usual occupations.

The owners, managers, or proprietors of hotels and boarding houses may place no restrictions on attendants or guests in their hotels or boarding houses further than the strict isolation of any children, as above described, from New York City, provided such children are isolated to the satisfaction of the local health officer and their noses and throats irrigated as specified.

Each health officer will see that a copy of these regulations with which he is furnished is conspicuously displayed in at least three public places in his town or city.

These rules and regulations will remain in force until further notice.

WEST VIRGINIA.

Communicable Diseases—Notification of Cases—Quarantine—Placarding—Disinfection—School Attendance—Funerals—Ophthalmia Neonatorum. (Reg. Public Health Council, Jan. 25, 1916.)

No. 69. For the purpose of these regulations the following-named diseases are declared to be contagious and infectious and dangerous to the public health, and hence are made notifiable: Anthrax, epidemic cerebrospinal meningitis, chicken-pox, glanders, hydrophobia, leprosy, German measles, trachoma, tuberculosis, typhoid fever, whooping cough. The following are communicable, notifiable, and quarantinable: Asiatic cholera, diphtheria (membranous croup), measles, poliomyelitis (infantile paralysis), scarlet fever (scarlatina, scarlet rash), smallpox (varioid), yellow fever, and typhus fever. Pellagra is declared to be a dangerous, controllable disease and is hereby made notifiable.

No. 70. Each and every physician practicing in the State of West Virginia who treats or examines any person suffering from or afflicted with any one of the notifiable diseases shall immediately report such case of notifiable disease in writing to the local health authority having jurisdiction. Said report shall be forwarded either by mail or by special messenger and shall give the following information:

1. The date when the report is made.
2. The name of the disease or suspected disease.
3. The name, age, sex, color, occupation, address, and school attended or place of employment of patient.
4. Number of adults and of children in the household.
5. Source or probable source of infection or the origin or probable origin of the disease.
6. Name and address of the reporting physician.

Provided, That if the disease is, or is suspected to be, smallpox the report shall, in addition, show whether the disease is of the mild or virulent type and whether the patient has ever been successfully vaccinated, the number of times and dates or approximate dates of such vaccination; and if the disease is, or is suspected to be, cholera, diphtheria, plague, scarlet fever, smallpox, or yellow fever the physician shall, in addition to the written report, give immediate notice of the case to the local health authority in the most expeditious manner available; and if the disease is, or is suspected to be, typhoid fever, scarlet fever, diphtheria, or septic sore throat the report shall also show whether the patient has been, or any member of the household in which the patient resides is, engaged or employed in the handling of milk for sale or preliminary to sale.

No. 71. The requirements of the preceding section shall be applicable to physicians attending patients ill with any of the notifiable diseases in hospitals, asylums, or other institutions, public or private: *Provided*, That the superintendent or other person in charge of any such hospital, asylum, or other institution in which the sick are cared for may, with the written consent of the local health officer (or board of health) having jurisdiction, report in the place of the attending physician or physicians the cases of notifiable diseases and disabilities occurring in or admitted to said hospital, asylum, or other institution in the same manner as that prescribed for physicians.

No. 72. Whenever a person is known, or is suspected, to be afflicted with a notifiable disease, or whenever the eyes of an infant under 2 weeks of age become reddened, inflamed, or swollen, or contain an unnatural discharge, and no physician is in attendance, an immediate report of the existence of the case shall be made to the local health officer by the midwife, nurse, attendant, or other person in charge of patient.

No. 73. Teachers or other persons employed in, or in charge of, public or private schools, including Sunday schools, shall report immediately to the local health officer each and every known or suspected case of a notifiable disease in persons attending or employed in their respective schools.

No. 74. The written reports of cases of the notifiable diseases required by this act of physicians shall be made upon blanks supplied for the purpose, through the local health authorities, by the State department of health.

No. 75. A weekly report of notifiable diseases, giving number of cases, color and sex of each patient and deaths, for the period ending Saturday of each week, shall be made by local, city, and county health officers to the State commissioner of health, and where no such diseases have been reported the report shall so state.

No. 76. The State commissioner of health may require special daily reports of new cases and deaths of notifiable diseases occurring each day in any locality. Such report shall be furnished and transmitted by health officers, by mail, telephone, or telegraph as directed.

No. 77. In order to secure uniformity of reports, the manner and form in which permanent records of all reported cases shall be kept by city or county health offices shall conform to the forms required by the State commissioner of health.

No. 78. Local city or county health officers shall notify the State commissioner of health of any unusual prevalence or epidemic of diseases not mentioned in the list of diseases made notifiable.

No. 79. No person shall interfere with any health authorities having jurisdiction or carry or remove from one building to another or from one locality to another, within or without the State, any patient affected with a communicable disease dangerous to the public health.

No. 80. Health officers shall satisfy themselves that all preventive measures prescribed in these regulations for the control and prevention of the spread of infection are being carried out in each and every case of communicable diseases reported to them.

Whenever a health officer shall know or suspect, or be informed of the existence of any communicable disease declared notifiable, and no licensed physician is in attendance, or should a physician in attendance fail or refuse to report such a case to the health officer, it shall be the duty of said health officer to investigate such case or cases of alleged communicable diseases and act as required, even when doubt exists, under the rules governing such cases of communicable diseases.

No. 81. Where doubt exists as to the diagnosis, the health officer should enforce quarantine measures for the suspected disease as if it were a communicable disease and refer the matter to the State commissioner of health, who will when deemed necessary have an investigation made for final decision.

No. 82. Whenever a case of obscure illness shall be reported to the health officer which, upon investigation, presents symptoms of a disease subject to quarantine or isolation, but in which, in the judgment of the health officer, sufficient time has not elapsed to render a positive diagnosis of the disease possible, a temporary quarantine or isolation shall be imposed, which quarantine or isolation shall be in all respects governed by the same rules and regulations as a permanent quarantine or isolation. If the disease proves not to be one of a contagious or infectious nature the health officers shall then declare the temporary quarantine or isolation terminated.

No. 83. Any person residing in a boarding house, lodging house, hotel, or hospital who is reported as having a communicable disease shall be effectively isolated, together with all his attendants. The door of the sick room shall be placarded with the name of the disease.

No. 84. No quarantine regulations of commerce or travel shall be instituted or operated by any place, city, town, or county against any other place or county in this or any other State except by authority of the State commissioner of health.

No. 85. The State commissioner of health shall impose such quarantine restrictions and regulations upon commerce and travel by railway, common carrier, or any other means, and upon all individuals, as in his judgment may be necessary to prevent the introduction of communicable diseases into the State or from one place to another within the State.

No. 86. *Quarantine, isolation, and observation.*—The following degrees of control are to be carried out in all cases of communicable diseases declared notifiable: Quarantine, isolation, and observation.

Quarantine is defined to mean and include:

(a) Strict isolation of the person sick and of those attendant upon him in a room screened against flies and mosquitoes.

(b) Prohibition of entrance to or exit from a building of any persons except the attending physicians, health authorities, or any person or persons especially authorized by the health authority.

Isolation.—Isolation is defined to mean and include:

(a) Complete separation of the person sick with the communicable disease and of his attendants from all other persons on the premises in a room screened against flies and mosquitoes.

(b) Prohibition of entrance to and exit from a building of any persons except of certain members of the family authorized by the health authority under definite restrictions; and such persons shall go about their usual occupations only on condition that they refrain from visiting places of amusement, worship, or education and from coming in contact with children.

Observation.—Observation is defined to mean and include:

(a) Inspection from time to time by the local health officer of a person suffering from a communicable disease not subject to isolation or quarantine.

(b) The supplying of information, printed or otherwise, to such person relative to the measures for the care and prevention of the spread of infection. The health officers shall have such surveillance over such person as deemed necessary to prevent them from becoming dangerous to the public health.

The following-named diseases shall be placed under observation: Tuberculosis, whooping cough, ophthalmia neonatorum, typhoid and paratyphoid fever, trachoma, pellagra, and hookworm disease.

Persons who have been exposed to a communicable disease may be quarantined, isolated, or placed under observation by any health authority until the period of incubation has elapsed.

No. 87. *Placarding premises.*—On all premises where a case of communicable disease exists subject to quarantine or isolation, there shall be posted in conspicuous places, both in front and rear, a placard not less than 6 by 10 inches in size, bearing the name of the disease in large black letters, and these words: A fine of not less than \$10 for entering this house or for altering, defacing, destroying, covering up, or removing this placard.

No. 88. *Unlawful to remove placard.*—It shall be unlawful to alter, deface, mutilate, destroy, cover, or remove any placard placed by a health official or by his authority. It shall be the duty of the occupant of the house or building from which a placard has thus been removed immediately to notify the health officer of such removal.

No. 89. *Release from quarantine.*—Quarantine or isolation shall be terminated only by order of the health officer, and not until measures for disinfection applying to the particular disease have been carried out under his direction or by his authorization.

No. 90. It shall be the duty of every physician in attendance upon a case of a communicable disease to notify the health officer having jurisdiction of the recovery or

death of the patient within six hours after such recovery or death. No person quarantined or isolated by reason of having a communicable disease shall be certified as having recovered therefrom until he is considered entirely free from danger of communicating the disease to others.

No. 91. *Unoccupied premise to be cleaned.*—No person shall rent, or permit to be occupied, any apartment, residence, or building previously occupied by a person who has suffered from tuberculosis, scarlet fever, diphtheria, smallpox, or poliomyelitis (infantile paralysis) until the inside of such apartments shall have been thoroughly disinfected and cleaned under the supervision of a health officer or his assistant.

No. 92. Every vacant house, store, office, or place of business or amusement in this State shall be thoroughly cleaned by means of the free use of water and a cleaning agent, vacuum cleaner, or other efficient and approved agent before being leased or used again.

No. 93. There shall not be any public, house, or church funeral of any person who has died of plague, Asiatic cholera, smallpox, typhus fever, diphtheria, scarlet fever, poliomyelitis (infantile paralysis), or cerebrospinal meningitis, and the attendance shall be limited, only adults being allowed to participate in a brief service. The public notice of death of a person dying from one of the diseases enumerated in this paragraph shall state the name of the disease which caused the death.

No. 94. No other persons than licensed physicians, undertakers, or nurses in attendance may enter or leave any house or building subject to quarantine without first procuring permission from the health officer having jurisdiction, and all persons must obey his directions as to all sanitary precautions.

No. 95. No person suffering or recovering from a communicable disease shall leave the sick room or premises where he has been under quarantine or isolation until after removal of the placard or warning card by the health officer or his assistant, or other person by his order.

No. 96. Physicians visiting patients under quarantine or isolation must take all possible precautions to avoid spreading the disease.

No. 97. All dogs, cats, or other domestic pet animals shall be excluded from the room of persons ill of diseases requiring quarantine or isolation, and should be excluded from the house.

No. 98. By an "infected house" as here used is to be understood a house in which a case of infectious and contagious disease has recently existed and which has not been properly cleansed and disinfected.

No. 99. *Ophthalmia neonatorum.*—All physicians and qualified midwives attending a case of childbirth are hereby required immediately after birth to instill into the baby's eyes a 1 per cent solution of silver nitrate or of any other silver preparation of equal effectiveness.

No. 100. Should one or both eyes of an infant become inflamed or swollen or reddened, or should any pus or secretion form in the eyes or upon the edge of the lids at any time, it shall be the duty of the midwife, nurse, or other person having charge of such infant to report, within six hours, to the local health officer, or to some legally qualified practitioner of medicine in the community in which such case shall occur, the fact that such inflammation, swelling, or redness or accumulation in the eyes exists.

No. 101. It shall be the duty of said health officer or physician, immediately upon receipt of the report, to notify the parents or person having charge of said infant of the danger to the eyes of said infant by reason of any neglect of proper treatment, and he shall give directions for the proper treatment thereof.

* * * * *

No. 25. Pupils actually infected with the following-named diseases shall be excluded from school during the existence of the disease, and shall be readmitted only upon presenting a certificate from a licensed physician attesting to their recovery: Tonsillitis, trachoma, scabies (itch), pediculosis capitis (head lice), pediculosis corporis

(body lice), tinea circinata (ringworm), impetigo contagiosa, favus. The teacher or principal shall exclude from school any child suspected to be suffering from any communicable disease, pending examination and report from a licensed physician.

No. 26. No child who has suffered and recovered from a communicable disease shall be permitted to enter any school, except upon certificate of a competent licensed physician, setting forth that all rules and regulations have been complied with and that the child presents no evidence of disease and is incapable of conveying infection.

No. 27. No person suffering from any communicable disease shall be employed as teacher or janitor, or in any capacity which brings him or her in contact with children, in any public school in the State.

No. 28. No person, either as teacher or pupil, afflicted or suspected to be afflicted with trachoma shall be allowed to attend any public, parochial, or private school in the State, and no person excluded from school for this cause shall be readmitted except after having been treated and relieved of any contagious disease of the eyes.

No. 29. No person shall be entered as a teacher, employee, or pupil in any school in the State without having first presented to the principal in charge or the proper authority a certificate from a competent licensed physician of this State, certifying that the said teacher, employee, or pupil has been successfully vaccinated against smallpox; or in lieu of a certificate of successful vaccination, a certificate certifying that a recent vaccination has been done in a proper manner; or proof of immunity by reason of having had the smallpox.

No. 30. Teachers boarding or residing in a family in which any disease subject to quarantine is known or suspected to exist, shall immediately move to premises not so infected and, provided they have not been actually exposed to infection, may be allowed to continue their attendance at school: *Provided*, That in the case of smallpox such teachers shall have been successfully vaccinated within five years; and in case of diphtheria that bacteriological examination of the discharges from the nose and throat proves negative, they may be permitted to resume their school duties.

Milk and Milk Products—Production, Care, and Sale. (Reg. Public Health Council, Jan. 25, 1916.)

No. 43. No person shall keep cows for the production of milk for sale or consumption within this State in any overcrowded condition, or in stables which are not properly ventilated, or which are insanitary from an accumulation of animal refuse, or from any other cause; nor shall milk for such purposes be drawn from cows which are themselves in a condition of filth or uncleanness, or infected with tuberculosis, or any other form of disease, or from cows which are fed, either wholly or in part, upon distillery waste or brewery grains, or the waste of vinegar factories, in a fermented condition, or upon any other form of food which will produce milk which is unhealthful or unwholesome; and all milk thus produced is hereby declared to be unclean, impure, and unwholesome milk, and its sale is hereby prohibited.

No. 44. Every person, firm, or corporation maintaining a dairy farm and barns shall keep the same and all appurtenances thereto clean and wholesome at all times, shall change the water in the coolers at least once in each day, and no building or space shall be used for dairy purposes which is not well lighted and ventilated, and which is not provided with a suitable floor, properly drained, and which contains less than 600 feet of cubic space for each cow.

No. 45. Milkers and those handling milk intended for the public shall at all times when milking or handling milk or cream maintain strict cleanliness of their hands and persons. They shall also cause the teats of the cows to be carefully cleaned with a damp, clean cloth immediately before milking, and shall cause each cow to be properly fed and watered. The milking shall also be done in a clean place free from dirt.

No. 46. No person suffering from, or who has knowingly, within a period of 20 days, been exposed to diphtheria, scarlet fever, erysipelas, smallpox, or other dangerous infectious diseases, unless proper disinfection under the direction of a health officer has been had, shall work or assist in or about any dairy or dairy farm, or milk depot; no proprietor, manager, or superintendent of any dairy farm shall knowingly employ any person suffering or exposed as aforesaid to work or assist in or about said dairy, farm, or depot.

No. 47. If a case of diphtheria, scarlet fever, smallpox, or other serious infectious disease occurs in the family of a person engaged in supplying milk or cream for the public, no member of the family who in any way comes in contact with the patient so afflicted shall have anything to do with the handling of the milk of the cows until a health officer has certified that the case has terminated and the room of the patient has been properly cleaned and disinfected, and the patient been discharged from treatment.

No. 48. No milk bottles shall be taken from a house in which a case of infectious disease is known to exist to be again filled until they have been sterilized or until a health officer has certified that the patient is ready to be discharged, and the room in which he has been quarantined has been thoroughly cleaned and disinfected. It is advised that no bottled milk be taken into such house but that the milk be emptied from the bottle into a vessel at the door.

No. 49. It shall be unlawful to sell, barter, or offer for sale or barter in this State milk drawn from cows within 15 days before or 6 days after parturition, or from cows suffering from any injury or disease which would affect the milk, especially diseases which are communicable to man, such as tuberculosis, anthrax, pneumonia, milk fever, or other diseases.

No. 50. No person, firm, or corporation shall manufacture, sell or offer or expose for sale, or have in possession for sale, or deliver or offer to deliver to another, any food product under the name of butter except such as shall have been made from the cream of a cow, and such butter shall not contain any coloring or other extraneous matter.

No. 51. No persons, firm, or corporation shall sell, barter, or offer for sale within the State any milk which contains more than 88 per cent of water or less than 3 per cent of butter fat, and the specific gravity of which 60° F. shall be lower than 1.030. All milk of lower grade and quality than specified by this rule shall be taken and condemned as adulterated and impure by any agent of the State health department.

No. 52. It shall be unlawful for any person, firm, or corporation to sell or dispose of in any way, or to have in custody with the intention of selling or expose or offer for sale as pure milk, any milk from which the cream or any part thereof has been removed, and all milk from which cream or any part thereof has been removed shall be plainly labeled and marked "skimmed milk" and sold as such.

No. 53. No person, firm, or corporation shall sell, barter, or offer for sale within the State any cream which contains less than 16 per cent of butter fat, and all cream of lower grade and quality than that shall be taken and condemned as adulterated and impure by any agent of the State health department.

No. 54. It shall be unlawful to add to milk intended for sale or barter in the State any chalk, borax, bicarbonate of soda, formaldehyde, or other preservative; ice, water, or other substance or fluid, and it shall be unlawful to sell or barter, or offer for sale or barter, any milk to which anything has been added or which has been adulterated in any manner, and such milk may be condemned and destroyed by any representative of the State health department.

No. 55. Any member of the public health council or any other representative of the State health department shall have the right to enter and examine any place within the State where milk is sold, bartered, or offered for sale or barter, and to inspect and examine at any time and any place, any of said milk, and said representative may also

examine any dairy farm or stable and investigate the methods of milking, the arrangements of dairy barns, the care of cows, and the methods of preparing the milk for market.

No. 56. If, upon inspection as above provided for, it is ascertained that one or more milk cows kept, owned, or used in any dairy or on the premises of any dairyman who sells or otherwise disposes of milk in the State, has tuberculosis, it shall be the duty of the inspector to notify the owner of said cow that it is tuberculous and must be removed from the herd. Upon receiving such notice, the owner must immediately stop using the milk from said cow, and either kill or quarantine her, and keep her quarantined until said animal shall either be killed or be found, upon further investigation, to be nontuberculous.

No. 57. Every farmer, dairyman, or other person who produces milk for the public market who has his dairy herd tested with tuberculin annually, and whose dairy barn, milk house, care of milk cows, manner of milking, and aftercare of milk are found by an agent of the State health department on inspection to be satisfactory, may be given "a certificate of merit" of the health department, good for three months, but such certificate shall be withdrawn if at any time the manner of producing and marketing the milk be found to be defective.

No. 58. Dairymen who wish to put a milk of exceptional excellence on the market, may be permitted to use the words "certified milk" on their labels, provided that they shall receive from the State health department a certificate of the unusual excellence of milk, which certificate shall be based upon a thorough investigation by an agent of the health department of the manner in which the milk is produced and put upon the market. Such certificate shall be good only for three months and shall be renewed only after a second investigation. Certified milk shall be from herds free from tuberculosis and shall contain not over 10,000 bacteria per cubic centimeter, and shall at all times be free from pathogenic germs; it shall contain 4 per cent of butter fat and other customary ingredients in proportion; the temperature of the milk when delivered to customers shall not be higher than 45° F. and it shall always be delivered in sealed packages.

No. 59. The selling or offering for sale of milk as "certified milk" or as "certificate of merit" milk is hereby prohibited unless the seller has a certificate of permission issued by the State health department after a proper investigation has been made.

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No. 68. It shall be unlawful to sell or barter, or offer for sale within the State, any butter that is not made from pure milk or cream. The same shall be free from all chemicals or adulteration, and shall comply in all respects with the requirements of the pure food laws of the State and the United States of America.

Ice Cream—Manufacture, Care, and Sale. Bacterial Standard for Milk. (Reg. Public Health Council, Jan. 25, 1916.)

No. 60. Ice cream, nut ice cream, fruit ice cream and all other forms of ice cream shall be made from wholesome milk products containing not less than 8 per cent milk fat, and the addition of not more than seven-tenths of 1 per cent of gelatin, gum arabic or other harmless stiffener or flavoring extracts. And if any artificial coloring matters are used, this fact must be declared upon the label of the package.

No. 61. All preparations not in accordance with the above shall plainly state on a label attached to the container, the ingredients and character and quantity of each, and they shall not be sold as ice cream.

No. 62. No ice cream shall be manufactured or stored in any portion of a building which is used for the stabling of horses or other animals, or in any room used in whole or in part for domestic or sleeping purposes, unless the manufacturing and storing room for ice cream is separated from other parts of the building to the satisfaction of the State and local health authorities.

No. 63. All rooms in which ice cream is manufactured or stored shall be provided with tight walls and floors and kept constantly clean. All utensils employed in the mixing, freezing, storage, sale, and distribution of ice cream, shall be frequently sterilized, and all such utensils after use shall be washed with boiling water. Vessels used in the manufacture and sale of ice cream shall not be employed as containers for other substances than ice cream.

No. 64. Ice cream kept for sale in any shop, restaurant, or other establishment shall be stored in a covered box or refrigerator. Such box or refrigerator shall be properly drained and cared for, and shall be tightly closed except during such intervals as are necessary for the introduction or removal of ice cream or ice, and they shall be kept in such locations and under such conditions as shall be approved by the State or local health authorities.

No. 65. Every person engaged in the manufacture, storage, transportation, sale, or distribution of ice cream, immediately on the occurrence of any case or cases of infectious disease, either in himself or in his family, or among his employees, shall notify the local board of health, and at the same time shall suspend the sale and distribution of ice cream until authorized to resume the same by the said board of health. No vessels which have been handled by persons suffering from such disease shall be used to store or to convey ice cream until they have been thoroughly sterilized.

No. 66. All cream or milk used in the manufacture of ice cream shall before use be kept at a temperature not higher than 50° F.

No. 67. No person shall by himself or through a servant or agent, or as the servant or agent of another person, firm, or corporation, sell, exchange, or deliver any milk, cream, or ice cream which contains more than 500,000 bacteria per cubic centimeter; and no old or melted ice cream or ice cream returned to the manufacturer, from whatever cause, shall be used in the preparation of ice cream, unless returned in a frozen state, and in the original container which has not been opened.

Schools—Location, Construction, and Maintenance. (Reg. Public Health Council, Jan. 25, 1916.)

In order that the health, sight, and comfort of school children may be properly protected, all school sites, houses, and equipment shall comply with the following regulations:

No. 12. All school sites shall be dry. A slight elevation is preferable, but if the site must necessarily be low, or even level, surface drainage or subsoil drainage shall be provided to insure freedom from dampness. The site shall not be adjacent to a cemetery, nor nearer than 500 feet to any of the following conditions, to wit: Swampy ground; body of stagnant water; livery stable; horse, mule, or cattle barn; hog pen; or any noise-making industry, or any unhealthful conditions. All school sites shall, if possible, have an area of not less than one-half acre, and from one to two acres is recommended.

No. 13. *The school building.*—All school buildings shall be weather tight, free from crevices in the floors or walls and from leaks in the roofs. The windows and doors shall be whole. Suitable steps at entrances shall, where necessary, be provided and kept in repair. No classroom shall exceed 24 feet in width, with ceiling not less than 12 feet nor more than 13 feet in height. Stair steps should have a rise of not more than 7 inches with a tread of not less than 12 inches. No winding stairs shall be used in schoolhouse construction. Where more than one riser is needed to reach an upper floor the turn shall be at right angles to a suitable landing.

No. 14. *Doors.*—In any schoolhouse the doors leading from the schoolrooms to the hallways and from the hallways to the street or ground surrounding the building shall open outwardly. Buildings of more than one story having four or more classrooms on

the upper floor shall be provided with two stairways, leading to outside doors, which shall be unlocked during school hours, be provided with fire bolts on the inside, and shall open outward.

No. 15. *Cloakrooms*.—All future school construction shall provide ample cloakroom facilities. All cloakrooms shall have window illumination communicating directly with the outside. They shall not be less than 4 feet wide and shall have not less than 50 linear feet of wall space for every 25 children. In rural districts racks should be provided for drying wraps.

No. 16. *School desks*.—All school desks shall be of an adjustable type and must be of a size suitable for children of varying bodily growth. No school desk shall be nearer than 24 inches to any wall or partition. Rows of desks shall be separated by an interval of not less than 18 to 20 inches.

No. 17. *Blackboards*.—Blackboards shall be of black slate preferably. The height of any blackboard shall not be greater than 6½ feet. The bottom of the blackboard shall be within 26 inches of the floor for primary classes and 30 inches in the higher grades. Blackboards shall not be placed between windows or on the rear walls of classrooms.

Chalk troughs shall be placed at the bottom of all blackboards for the collection of chalk dust, covered with a coarse-mesh wire detachable for cleansing.

No. 18. *Toilets*.—Where a sewerage system or pressure water supply is available, or practicable, at least two water-closets shall be installed and connected with the sewerage system, one for males and one for females, and so arranged as to afford the greatest possible privacy. Where water and sewerage are not available, particularly in rural, village, and town schools, at least two outbuildings or privies shall be provided, one for males and one for females, and separated one from the other as far as the dimensions of the school lot will permit, but not less than 30 feet to the school building. Said privies shall be fly proof and shall be built and maintained in accordance with plans and specifications to be provided by the public health council on application.

All school toilets and privies shall have five seats for every 100 boys and seven seats for every 100 girls and very young children.

All privies shall be screened in front by boarding or other means for privacy.

All boys' privies shall be provided with urinal troughs.

No. 19. *Heating and ventilation*.—All classrooms shall have at least 18 square feet of floor space and not less than 200 cubic feet of air space for each pupil. The air of these rooms shall at all times be kept in a wholesome condition, and exercises shall be suspended as often as necessary to renew the air in any room the ventilation of which is defective. Where more approved methods of ventilation have not been installed, the rooms shall be ventilated during study and class periods by lowering the windows from the top, and during breathing exercises and at recess periods from the bottom. Improved heaters are recommended, but where these have not been provided, the stoves, where stoves are used, shall be jacketed. At least one thermometer shall be provided for each classroom, to be placed not higher than 4 feet from the floor, and a uniform temperature, not to exceed 70° F., and a proper degree of humidity shall be maintained.

Artificial-ventilation systems shall supply at least 1,800 cubic feet of air per hour for each pupil and not less than six complete changes of air per hour.

No. 20. *Lighting*.—Light shall be admitted only from the left side and from the rear of the rooms. The total glass area of the windows shall equal not less than one-fifth of the floor surface. The windows in the left side of the room shall be set with the least possible space between them, and they shall be not less than 3½ feet from the floor, coming up as near to the ceiling as the casing and finish will permit. Window shades shall be provided for the protection of the eyes of the pupils from a glare of light and shall permit adjustment from either the top or bottom.

No. 21. *Water for washing.*—Water and soap for hand washing shall be provided, but no common towel shall be used in any public school in the State. Paper towels are recommended, but pupils may be permitted to use their own private towels.

No. 22. *Drinking water.*—Boards of education or other school officers in charge shall see that their schools are provided with, or have access to, an abundant supply of pure drinking water. Buckets and all other open water receptacles are forbidden, and also the use of the common drinking cup. Sanitary drinking fountains or individual drinking cups shall be used exclusively in all schools. Where it is necessary to use a water receptacle, a closed jar, tank, or cooler with faucet shall be provided, which shall be kept clean and which shall have its contents renewed at least every morning.

No. 23. *Sweeping of rooms.*—No classroom shall be swept except after all school exercises for the given day have been concluded, and no floor of a schoolroom shall be swept without first having been covered with damp sawdust or other suitable preparation for this purpose. All sweepings or waste shall be removed from each schoolroom daily. The seats, desks, and other furniture shall be wiped down with an oiled or paraffined cloth every day after the dust has settled, and the woodwork or finishing of every schoolroom and of every hallway or corridor shall be wiped down in the same way at least once a week.

No. 24. *Sanitation of school buildings and grounds.*—The public health council shall, whenever it deems necessary or advisable, cause an investigation of the sanitary condition of any schoolhouse, building, or ground used for school purposes. If they shall find that such schoolhouse, building, or ground is in any respect a menace, or likely to become a menace, to the health or physical welfare of the pupils or teachers, they shall call the attention of the local board of health to the fact; and if, after a reasonable length of time the complaint has not been attended to in a satisfactory way, they shall either order such changes as in their judgment will make the building and grounds safe and sanitary for school purposes, or condemn the same and forbid their further use.

It shall be the duty of the school board of the district forthwith on notification to make the changes ordered, and the cost of the same shall be a charge upon the district.

Churches, Theaters, and Buildings Used for Public Meetings—Cleaning and Ventilation—Spittoons. (Reg. Public Health Council, Jan. 25, 1916.)

No. 9. *Churches and public halls.*—Any church, hall, theater, or other building used for public meetings shall be kept at all times in a clean and sanitary condition. Every such building shall be provided with means for maintaining proper ventilation while in use.

No. 10. *Cleaning and ventilation.*—All buildings used for public meetings shall be cleaned after each meeting held in them, such cleaning to consist of thorough sweeping of floors and wiping of woodwork, together with the opening of all windows and doors to permit the entrance of fresh air, unless the particular ventilating system in use renders this unnecessary. No such building or room shall be swept without first sprinkling the floor with water or throwing on it damp sawdust or other absorbent material to prevent dust. Woodwork shall be wiped down with an oiled or paraffined cloth, and dry dusting with feathers or dry cloth shall not be practiced. In construing this rule, all meetings held during the course of a single day will be regarded as one meeting.

No. 11. *Cuspidors.*—An ample number of spittoons or cuspidors shall be furnished, which shall contain sufficient water to stand one-half inch deep on the bottom. They shall be emptied, washed, and disinfected with an approved disinfectant after each day's use.

Railroad Coaches and Stations—Cleaning and Disinfection—Toilets—Spitting Prohibited. (Reg. Public Health Council, Jan. 25, 1916.)

No. 1. *Coaches.*—All railroad coaches used by passengers shall be provided with toilet facilities, which shall at all times be kept in clean and sanitary condition. The floors of all toilets shall be of impervious material and shall be washed with an approved disinfectant solution at the end of every run. The seat, hopper and woodwork of these toilets shall be cleaned and washed with a disinfectant solution at the end of every run. Every closet shall be provided with proper ventilation sufficient to maintain purity of the atmosphere.

No. 2. *Dusting and cleaning.*—No railroad coach or street car shall be swept or dusted while occupied by passengers. All railroad coaches and street cars shall at all times be kept in a clean and sanitary condition. Necessary cleaning may be done with a hand brush and dustpan if no dust is raised thereby.

No. 3. *Special cleaning and disinfection.*—All coaches shall be thoroughly cleaned, dusted, sunned, and aired at least once each month. Cleaning shall include the removal from the car of everything movable, thoroughly wiping down all woodwork, scrubbing the floors, dusting the carpets and seats, and fumigating the interior of the car with formaldehyde gas as prescribed in the regulations on disinfecting.

No. 4. *Expectoration.*—It shall be unlawful for any passenger or other person to expectorate on the floor of any car, and the conductors, brakemen, and porters shall call the attention of passengers to this rule, and shall at once supply offenders with cuspidors.

No. 5. *Stations.*—Waiting rooms, offices and other portions of railroad stations shall at all times be kept in a clean and sanitary condition. Sweeping shall not be done in the presence of waiting passengers except in stations which are open continuously. In these stations sweeping shall be done only after sprinkling the floor with water or throwing on it damp sawdust or other absorbent material to prevent dust. Woodwork shall be wiped down with a damp cloth, and dry dusting with feathers or dry cloths shall not be practiced.

No. 6. *Cuspidors.*—Spitting upon the floor, walls, steps, stairways, sides, or platform of any railroad, steam, electric, or street car, station, steamboat, or ferryboat, or elevator car is hereby prohibited. Whenever a passenger applies for a cuspidor to the conductor the same shall be furnished him. Such cuspidors shall be emptied, washed and disinfected with an approved disinfectant at least once every day.

No. 7. *Regular cleaning.*—All stations shall be thoroughly cleaned at least once each week. Cleaning shall include thorough wiping down all woodwork with a damp cloth and scrubbing the floors.

No. 8. *Closets required.*—Every railroad station shall be provided with two sets of closets, one each for male and female. Where water and sewerage are available these shall be water-closets, which shall be connected with the public sewerage. Where water and sewerage are not available, closets shall be built in accordance with the provisions, plans, and specifications to be furnished on application by the public health department. They shall at all times be kept in a clean and sanitary condition.

Barber Shops—Regulation of. (Reg. Public Health Council, Jan. 25, 1916.)

No. 31. No person with any disease of the skin of the face shall be shaved in a public barber shop, nor shall any barber with an eruption on his hands pursue his business.

No. 32. Barbers must wash their hands thoroughly with soap and water before attending any customer. No towel shall be used for more than one person without being laundered or sterilized.

No. 33. The use of sponges and powder puffs is prohibited in barber shops.

No. 34. Mugs and shaving brushes must be thoroughly washed with hot water after use on each person.

No. 35. Combs, razors, clippers, and scissors must be thoroughly cleansed after each separate use thereof.

No. 36. The floors of all barber shops must be swept or mopped each day, and all furniture and woodwork kept free from dirt.

No. 37. Running water shall be provided wherever possible.

No. 38. All bath tubs in connection with a barber shop shall be thoroughly cleansed with soap and water after each separate use.

No. 39. All tools or instruments used by barbers outside the shop in serving any person suffering from infectious or contagious diseases must be thoroughly and efficiently disinfected with 4 per cent formaldehyde (that is, one part of the standard 40 per cent solution of formaldehyde to 9 of water) or by boiling immediately after using the same.

No. 40. No person suffering from any infectious or contagious disease shall serve any person in any barber shop, public bathroom, bathhouse or hairdressing parlor in the State.

No. 41. A copy of these regulations is to be hung in a conspicuous place in each barber shop, school for barbers, public bathhouse, and public bathroom and in each hair dressing parlor in the State.

No. 42. *Disinfection.*—In all of the above regulations where the word disinfection is used it shall imply the use of one of the following: Carbolic acid, 2 per cent solution; formaldehyde, 4 per cent solution (that is, 1 part of the standard 40 per cent solution of formaldehyde to 9 of water); bichloride of mercury (corrosive sublimate), 1 part in 2,000 of water; tricresol, creolin, or lysol, 1 per cent solution in water.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

ALAMEDA, CAL.

Garbage—Keeping of Animals, Vehicles, and Appliances Used in the Collection of. (Ord. 63, N. S., Mar. 24, 1916.)

SECTION 1. It shall be unlawful for any person, firm, or corporation, after the passage of this ordinance, to keep, maintain, store, house, stable, or allow to remain for any portion of a day or night upon any lot or parcel of land situated within 500 feet of any residence of the city of Alameda, any scavenger wagon, garbage wagon, swill cart, horse or horses, mule or mules, cans, barrels, tools, or appliances used in the collection of garbage, scavenger material, or swill.

SEC. 2. Every person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than \$50 or more than \$500, or by imprisonment in the city prison for a period of not more than six months.

ALEXANDRIA, LA.

Privies—Location, Construction, and Maintenance. (Reg. Bd. of H., Jan. 13, 1916.)

SECTION 1. That no privy or water-closet shall hereafter be maintained or built except such as are so constructed as to render them fly proof and easily cleaned, and in accordance with the following requirements. They shall be of wood, brick, or other material approved by the city board of health, as follows:

(a) The floor shall be solid and water-tight, covering the entire base of the building inside the walls.

(b) The house shall be without cracks through which flies may enter. It shall be provided with a tight self-closing door, and shall be lighted and ventilated by one or more openings, said opening or openings to give space not less than 4 square feet. All openings whether for ventilation or otherwise which are not provided with doors, windows, or shutters, shall be screened with 18-mesh cross wire per inch. Doors shall be kept closed.

(c) The roof of each privy shall be water-tight and if sloped to the rear of the house it shall project not less than 6 inches beyond the rear wall of the house.

(d) The seat shall have a self-closing hinged cover over the box opening. That flies may be excluded, the compartment under the seat, in which stands the night-soil container, shall be tightly constructed of sound lumber without cracks or crevices.

(e) Each closet shall be provided with a vent pipe, with a caliber of at least 16 square inches, so constructed as to extend from below the seat out through the roof and at least 1 foot above the roof. This vent shall be covered at the top with either copper wire, cross net, at least 18 wires to the inch, or a perforated tin cover so as to prevent flies gaining access to the night soil.

(f) There shall be at the back or side of each privy an opening for the removal of the night-soil container, which opening shall be provided with a tightly fitting let-down board, hinged to the house and so constructed as to prevent the access of flies to the night soil. This cover shall be provided with a hook or button and shall always be kept closed. Where practicable, the opening shall abut on a public alley so as to be readily accessible to the scavenger.

(g) No privy shall be built or maintained within 20 feet of the line of any street or any house, or within 50 (preferably 100) feet of any well, or within 3 feet of the party line of the adjacent lot or lots, except in the rear or side of lots where they abut on the public alley.

SEC. 2. That, whenever, in the opinion of the board of health, the condition of any privy is such that it can not be put in sanitary condition so as to comply with the foregoing regulations, the board of health shall order a new privy constructed in conformity with the foregoing regulations, and it shall be installed within a reasonable time by the owner of the property.

SEC. 3. That all privies shall be kept clean at all times. The excrement shall be removed at least once each month, seat scoured, and building thoroughly cleaned so as to prevent objectionable odors. The door of the house must not be left open.

SEC. 4. That no wash water, garbage, kitchen slops, or other liquid waste shall be emptied into the privy. No night soil from any person suffering from typhoid fever or other serious bowel trouble shall be emptied into any privy without being previously disinfected in such manner as directed or approved by the board of health. This ordinance shall become effective and in full force March 1, 1916.

SEC. 5. That any person or persons guilty of violating any of the provisions of this ordinance shall upon conviction be punished by a fine not exceeding \$5, or imprisonment not exceeding five days, in the discretion of the court. Failure to comply with the provisions of this ordinance within 15 days after conviction shall constitute a new offense.

ALLENTOWN, PA.

Communicable Diseases—Notification of Cases—Quarantine—Placarding—Disinfection—Attendance at Schools and Public Gatherings—Burial—Reports to State Department of Health. (Ord. Mar. 4, 1916.)

SECTION 1. That every physician, practicing in any portion of this Commonwealth, who shall treat or examine any person suffering from or afflicted with actinomycosis, anthrax, bubonic plague, cerebrospinal meningitis (epidemic), cerebrospinal fever (spotted fever), chicken-pox, Asiatic cholera, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), epidemic dysentery (bacillary or amebic dysentery), erysipelas, German measles, glanders (farcy), rabies (hydrophobia), leprosy, malarial fever, measles, mumps, pneumonia (true), puerperal fever, relapsing fever, scarlet fever (scarlatina, scarlet rash), smallpox (variola, varioloid), tetanus, trachoma, trichiniasis, tuberculosis in any form, typhoid fever, paratyphoid fever, typhus fever, whooping cough, yellow fever, anterior poliomyelitis, impetigo contagiosa, pellagra, scabies, or uncinariasis, shall forthwith make a report in writing to the health authorities of the city, upon blanks supplied for that purpose, in which report he shall, over his or her own signature, state the name of the disease, and the name, age, sex, color, nativity, and occupation, if any, of the person suffering therefrom, together with the street and house number of the premises in which said person may be located, or otherwise sufficiently designate the same, the date of the onset of the disease, the name and occupation of the householder in whose family the disease may have occurred, the number of children in said household attending school, and the name or names of the school or schools so attended.

SEC. 2. Upon receipt by the health department of a report of the existence of a case of anthrax, bubonic plague, cerebrospinal meningitis (epidemic) (cerebrospinal fever, spotted fever), chicken-pox, Asiatic cholera, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), German measles, glanders (farcy), leprosy, malarial fever, measles, mumps, relapsing fever, scarlet fever, (scarlatina, scarlet rash), smallpox (variola, varioloid), typhoid fever, paratyphoid fever, typhus fever, whooping cough, or yellow fever, the said health authorities shall quarantine or cause to be quarantined the premises in which such disease exists, and any person or persons who has or have been exposed thereto, in the manner prescribed by the rules and regulations of said health authorities, and shall post or cause to be posted in a conspicuous place or places, upon the premises in which said disease may be located, a placard or placards upon which shall be printed in conspicuous letters the name of the disease from which the person or persons in said house or premises is or are suffering, with the warning that the said premises are quarantined, that no person or persons other than the attending physician and trained nurse shall enter or leave the said premises, except by permission of the health authorities, and setting forth the penalties prescribed by this ordinance for violations of quarantine: *Provided*, That variola or varioloid shall be placarded as "smallpox," and that diphtheritic croup, membranous croup, and putrid sore throat shall be placarded as "diphtheria," that scarlatina and scarlet rash shall be placarded as "scarlet fever," and that paratyphoid fever shall be placarded as "typhoid fever": *Provided further*, That, in addition to the placarding aforesaid, said health authorities may, for the purpose of enforcing quarantine regulations, place a guard or guards over said house or premises.

SEC. 3. That the said placard or placards shall remain in place until the expiration of the quarantine period fixed by the health authorities, and the recovery, death, or removal of the person or persons affected; and shall only be removed by the health officer, at which time he shall disinfect the premises, except for typhoid fever and paratyphoid fever, in accordance with the rules and regulations of the health authorities and the State department of health regarding the destruction and disinfection of infected bedding, clothing, and other articles which have been exposed to infection, and the disinfection of rooms, premises, and inmates.

SEC. 4. The quarantine period for anthrax, bubonic plague, cerebrospinal meningitis (epidemic) (cerebrospinal fever, spotted fever), Asiatic cholera, typhus fever, yellow fever, relapsing fever, leprosy, and whooping cough shall be until the recovery, death, or removal of the patient so suffering, and shall be determined in accordance with the rules and regulations of the health authorities. The quarantine period for smallpox (variola, varioloid), and scarlet fever (scarlatina, scarlet rash), shall be a minimum period of 30 days, or until such time thereafter as the last person in the premises so suffering shall have fully recovered, or until death or removal. The quarantine period for diphtheria (diphtheritic croup, membranous croup, putrid sore throat) shall be a minimum period of 21 days, or until complete recovery or the death or removal of the patient: *Provided*, That if antitoxin has been used for curative purposes for the patient, and for the immunizing of all of the inmates of the premises, and two negative bacteriological cultures have been secured from the diseased area of each patient on the premises, for two successive days, the minimum period of quarantine may be 14 days. The quarantine period for measles, German measles, chicken-pox, and mumps shall be for a minimum period of 16 days, or until the recovery of the last person on the premises so suffering, or until complete recovery or the death or removal of the patient.

SEC. 5. No child or other person suffering from anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), Asiatic cholera, smallpox (variola, varioloid), typhus fever, yellow fever, relapsing fever, leprosy, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), measles, German measles, glanders (farcy), chicken-pox, mumps, or whooping cough shall be

permitted to attend any place of amusement, or any church, or any other public gathering, or to be exposed on any public street, or in any store, shop, factory, or other place of business, or be permitted to attend any public, private, parochial, Sunday, or other school; and the teachers of public schools, and the principals, superintendents, teachers, or other persons in charge of private, parochial, Sunday, or other similar schools are hereby required to exclude any of such persons from said schools, such exclusion to continue until the case has recovered, the quarantine lifted, and the premises thoroughly disinfected.

SEC. 6. No child or other person suffering from scarlet fever (scarlatina, scarlet rash) shall be permitted to attend any place of amusement, or any church, or other public gathering, or to be exposed on any public street, or in any store, shop, factory, or other place of business, or be permitted to attend any public, private, parochial, Sunday, or other school; and the teachers of public schools, and the principals, superintendents, teachers, or other persons in charge of private, parochial, Sunday, or other schools, are hereby required to exclude any and all such persons and children from said school, such exclusion to continue for a period of 10 days following the removal of quarantine and a thorough disinfection of the premises subject to a certificate of complete recovery furnished to the health authorities by the attending physician.

SEC. 7. No child or other person residing in the same premises with any person suffering from anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), Asiatic cholera, smallpox (variola, varioloid), typhus fever, yellow fever, scarlet fever (scarlatina, scarlet rash), relapsing fever, leprosy, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), measles, German measles, chicken-pox, or mumps, shall be permitted to attend any place of amusement, or any church, or other public gathering, or to be exposed, except by permission of the health authorities, on any public street or in any store, shop, factory, or other place of business; or be permitted to attend any public, private, parochial, Sunday, or other schools; and the teachers of public schools, and the principals, superintendents, teachers, or other persons in charge of private, parochial, Sunday, or other similar schools are hereby required to exclude any and all such persons from said schools, such exclusion to continue until quarantine is lifted and the premises thoroughly disinfected.

SEC. 8. Any child or person residing on the same premises with any person suffering from anthrax, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), or typhus fever may be allowed, after taking a disinfecting bath and putting on disinfected clothing, to remove from said premises and take up his or her residence on other premises, and may after such removal be admitted into any of the said schools; and any child or person residing on the same premises with any one suffering from diphtheria (diphtheritic croup, membranous croup, putrid sore throat) may be allowed after taking a disinfecting bath and putting on disinfected clothing, and after anti-toxin has been administered for immunizing purposes, to remove from the said premises, and take up his or her residence on other premises occupied only by adults; and may, after five days from said removal, be admitted into any of the said schools; and any child or person residing on the same premises with any child suffering from scarlet fever (scarlatina, scarlet rash), measles, German measles, mumps, or chicken-pox, may be allowed, after taking a disinfecting bath and putting on disinfected clothing, to remove from the said premises, and take up his or her residence on other premises occupied only by adults, or by children who are immune to the disease (scarlet fever, scarlatina, scarlet rash, measles, German measles, mumps, or chicken-pox) existing on said premises from which the said child or person has removed, such immunity being shown by the official health records, and may, 14 days after such removal, be admitted to any of the said schools: *Provided*, That if the child or person residing on the same premises with any person suffering from any of the said diseases (scarlet fever,

scarlatina, scarlet rash, measles, German measles, mumps, or chicken-pox), and removing therefrom as above provided, is himself or herself immune from the disease existing on the said premises, by virtue of a former attack, this fact being shown by the official health records or by other evidence satisfactory to the health authorities, such immune child or person may, on the day following such removal, be admitted to any of the said schools; and any child or person residing on the same premises with any person suffering from relapsing fever may be allowed, after taking a disinfecting bath and putting on disinfected clothing, to remove from the said premises, and take up his or her residence on other premises, and may, after 10 days from such removal, be admitted to any of the said schools.

SEC. 9. That every teacher, principal, superintendent, or other person or persons in charge of any public, private, parochial, Sunday, or other school, having in any such school any child or person showing an unusual rash or skin eruption, or complaining of soreness in the throat, or having symptoms of whooping cough, or any disease of the eye, shall immediately exclude such child or other person from the schools, pending the action of the health authorities, and shall report such fact to the health authorities, giving the name and residence of such child or other person.

SEC. 10. No child or other person, excluded from any school by the provisions of this act, shall be readmitted thereto unless he or she, or some person on his or her behalf, shall furnish to the principal, superintendent, or teacher or other person in charge of said school, a certificate setting forth that the conditions for such readmission prescribed by this ordinance have been complied with; which certificate shall be signed by a person to be designated for that purpose by the health authorities exclusively; and the registry of all public, private, parochial, Sunday, and other schools shall exhibit the names and residences of all children and persons excluded therefrom or readmitted thereto, and said register shall be open at all times to the inspection of the health authorities.

SEC. 11. Blanks whereon to make the reports and certificates required by this ordinance shall be supplied by the health authorities.

SEC. 12. It shall be the duty of the health authorities to furnish daily, by mail or otherwise, to principals, superintendents, teachers, and other persons in charge of public, private, parochial, Sunday, and other schools, a printed or written bulletin containing the name, location, and disease of all persons suffering from any of the diseases mentioned in sections 5 and 6 of this ordinance, upon receipt by them of reports of such cases from physicians, as required by section 1 of this order.

SEC. 13. Upon the removal to a hospital or other place, or upon the discharge by the recovery or death of any person or persons who has or have suffered from tuberculosis or any of the diseases mentioned in section 2 of this ordinance, all premises which have been occupied by the said person or persons while suffering from any of the said diseases shall be fumigated and disinfected, or destroyed, at such time and in such manner as may be authorized and required by the health authorities.

SEC. 14. No person suffering from any of the diseases mentioned in section 2 of this ordinance, nor any one who has charge of the persons so suffering, shall enter any hired vehicle or other public conveyance, or permit anyone in his or her charge who is suffering therefrom to enter such vehicle, without previously securing the consent of health authorities, and notifying the owner or driver thereof that he or she, or the person in his or her charge, is so suffering; and the owner or driver of such vehicle shall immediately provide for the disinfection of such conveyance, under the direction of the health authorities, after it has with the knowledge of such owner or driver conveyed any such sufferer.

SEC. 15. No person suffering from anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), chicken-pox, Asiatic cholera, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), measles, German measles, glanders (farcy), mumps, relapsing fever, scarlet fever (scarlatina,

scarlet rash), smallpox (variola, varioloid), typhus fever, typhoid fever, yellow fever, or whooping cough, shall willfully expose himself or herself in any street or public place, or public conveyance, nor shall any person in charge of anyone so suffering thus expose the sufferer.

SEC. 16. No person, without previous disinfection, shall give, lend, sell, transmit, or expose any bedding, clothing, rags, or other articles which have been exposed to infection from any of the diseases mentioned in section 1 of the ordinance: *Provided*, That such restriction shall not apply to the transmission of articles, with proper precaution, for the purpose of having the same disinfected.

SEC. 17. No person shall let any room, house, or part of a house, in which there has been a person suffering from tuberculosis or any of the diseases mentioned in section 2 of this ordinance, without having such room, house or part of a house, and all articles therein, previously disinfected to the satisfaction of the health authorities. The keeping of a hotel, boarding house, or apartment house shall be deemed as letting a part of a house to any person who shall be admitted as a guest into such hotel, boarding house, or apartment house.

SEC. 18. In the preparation for burial of the body of any person who has died of Asiatic cholera, glanders (farcy), bubonic plague, smallpox (variola, varioloid), yellow fever, typhus fever, scarlet fever (scarlatina, scarlet rash), relapsing fever, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), diphtheria (diphtheritic croup, membranous croup, putrid sore throat), tetanus or leprosy, it shall be the duty of the undertaker, or person acting as such, to thoroughly disinfect and place such body within the coffin or casket in which it is to be buried within 6 hours after being first called upon to take charge of the same, provided said call is made between the hours of 5 antemeridian and 11 post meridian; otherwise, such body shall be placed in such coffin or casket within 12 hours; the coffin or casket then to be closed tightly, and not again opened unless permission be granted by the health authorities for special and satisfactory cause shown.

SEC. 19. The body of a person who has died of any of the diseases mentioned in section 18 of this ordinance shall not remain unburied for a longer period of time than 36 hours after death, unless special permission be granted by the health authorities extending the time during which said body shall remain unburied, for special and satisfactory cause shown. The undertaker, or person acting as such, shall be responsible for any violation of the provisions of this section.

SEC. 20. All services held in connection with the funeral of the body of a person who has died of any of the diseases mentioned in section 18 of this ordinance shall be private, and the attendance thereat shall include only the immediate adult relatives of the deceased, who may not at the time be under absolute quarantine restrictions, and the necessary number of adult pallbearers, and any advertisement of such funeral shall state the cause of death.

SEC. 21. The body of a person who has died of any of the diseases mentioned in section 18 of this ordinance shall, in no instance, be taken into any church, chapel, public hall, or public building, for the holding of funeral services. The undertaker, or person acting as such, and the sexton, janitor, or other person having control of such church, chapel, public hall, or public building, shall be responsible for any violation of the provisions of this section.

SEC. 22. ~~No~~ undertaker, or person acting as such, at the funeral or burial of the body of a ~~person~~ who has died of any of the diseases mentioned in section 18 of this ordinance shall furnish or provide for such funeral or burial more than the necessary number of conveyances for such adult relatives as are mentioned in section 20 of this ordinance, and pallbearers; and all such conveyances shall be fumigated and disinfected at such time and in such manner as may be directed and required by the health authorities.

SEC. 23. The body of a person who has died of any of the diseases mentioned in section 18 of this ordinance shall not be conveyed from any dwelling, or other building or place, to any cemetery or other point or place, except in a hearse, or other vehicle used for the purpose of carrying corpses only, or in such vehicles as shall be satisfactory to the health department and under such regulations as they may in any case adopt. The undertaker, or person acting as such, having charge of the funeral or transportation of such body, shall be responsible for any violation of the provisions of this section.

SEC. 24. The health department shall, at the end of each week and for the fraction of each week occurring at the end of each month, report to the State department of health, upon blanks supplied for that purpose, a list of all cases of communicable diseases mentioned in section 1 of this ordinance which have been reported to them during said period, which report shall contain the name of each person suffering therefrom, respectively, and his or her age, sex, color, and nativity, together with the name of the disease and the date of the onset thereof; and, in the event of no reports of any of said diseases having been received by the aforesaid health authorities, respectively, during any said period, that fact shall be reported to the State department of health.

SEC. 25. Any person who shall remove, deface, cover up, or destroy, or cause to be removed, defaced, covered up, or destroyed any placard relating to any of the diseases mentioned in section 2 of this ordinance shall, for every such offense, upon conviction thereof before the mayor, be summarily punished by a fine of not less than \$10 or more than \$100 for each and every offense or be confined in the city lockup or county jail for a period of not less than 10 days or more than 30 days, or both, at the discretion of the mayor. Any person, other than the attending physician or trained nurse, who shall enter or leave any quarantined premises without having secured permission from the health authorities, or who shall violate any of the quarantine restrictions imposed by this ordinance, or who shall interfere with a health officer or any other duly qualified agent of the State department of health in the discharge of his official duties in the placarding, quarantining, disinfecting, or releasing from quarantine of any premises or in the investigation of any alleged case of a quarantinable disease, shall, for every such offense, upon conviction thereof before the mayor, be sentenced to pay a fine of not less than \$50 or more than \$100 or be imprisoned in the city lockup or county jail for a period of not less than 10 or more than 30 days, or both, at the discretion of the mayor.

Any physician, undertaker, teacher of a public school, principal of a school, superintendent of a Sunday school, sexton, janitor, parent, or guardian, or any other person or persons who shall fail, neglect, or refuse to comply with, or who shall violate, any of the provisions of this ordinance shall, for every such offense, upon conviction thereof before the mayor, be sentenced to pay a fine of not less than \$20 or more than \$100 or be imprisoned in the city lockup or county jail for a period of not less than 10 or more than 30 days, or both, at the discretion of the mayor.

ASHEVILLE, N. C.

Milk—Sale of—Containers. (Ord. Apr. 12, 1916.)

That section 519 of chapter 10 of Bourne's Code, 1909, of the ordinances of the city of Asheville be, and the same is hereby, amended and supplemented by adding to the end of said section another section, as follows:

SEC. 519a. That no person shall sell or deliver for himself or another any milk in the city of Asheville unless the same be contained in a sealed vessel so as to protect the original contents thereof from molestation, adulteration, and contamination without first breaking or removing said seal.

All such vessels shall be plainly marked for identification with the name of the owner or person offering said milk for sale or delivery in said city, and if said milk be sold and delivered, or sold or delivered by or through another, other than the owner or producer, then said agent's name shall also be plainly marked on or attached to said vessel or container.

The board of commissioners shall from time to time adopt such reasonable rules and regulations with reference to the kind of vessels and method of sealing and delivery of said milk as may be necessary to carry this ordinance into effect, and any and all such rules and regulations shall be a part of this ordinance.

Any firm, person, or corporation failing or refusing to comply with the rules and regulations adopted by said board or who shall violate any of the provisions of this ordinance shall be subject to a penalty of \$25 for each and every such failure or violation.

Milk—Sale of, at Hotels, Restaurants, Lunch Stands, etc. (Ord. Apr. 12, 1916.)

That every person, firm, or corporation owning, operating, or maintaining any restaurant, lunch stand, or other place of business wherein is sold milk by the glass, or by the small quantity in bottles or glass, to be drunk or used on the premises, shall serve said milk in glasses, cups, or containers, with the quality and kind of such milk so served plainly marked or printed on same, or, in lieu of marking said glasses or containers in which milk is served said persons shall mark in plain printed characters the kind or quality of milk so served upon the large container from which said milk is drawn, and the marked side of said large container shall be so displayed as to be easily seen and observed by any and all customers.

Any person, firm, or corporation refusing to comply with the foregoing ordinance or violating any of its provisions shall be guilty of a misdemeanor and shall be liable to a penalty of \$25 for each and every such offense.

BAKERSFIELD, CAL.

Milk and Milk Products—Production, Care, and Sale. (Ord. 305, Apr. 3, 1916.)

SECTION 1. That no person, firm or corporation, either by himself or by his agents or employees, shall sell, exchange, or deliver, or offer or expose for sale, exchange, or delivery, within the city of Bakersfield for human consumption any milk, cream, buttermilk or skimmed milk, ice cream, or butter without first having obtained a permit so to do from the health officer of said city as hereinafter described: *Provided*, That dairies at which not more than one cow is kept shall not be subject to the provisions of this ordinance.

SEC. 2. Licenses referred to in section 1 shall be issued by the city health officer only upon the following conditions:

(a) Application therefor shall first be made upon a form prescribed by the health officer, which shall contain at least the following information:

1. Name and address of applicant.
2. Location of any place or places at which such milk, cream, buttermilk or skimmed milk, ice cream, or butter is to be produced or stored or handled.
3. Number of cows from which such milk is being obtained.
4. If obtained from another person, firm, or corporation, the name and address of such person, firm, or corporation, and the location of any and all places at which such milk is being or to be produced, stored, or handled, and the number of gallons of such milk obtained from each such person, firm, or corporation.
5. The manner in which such milk is to be disposed of and, if delivered from house to house, the number of wagons or vehicles used for that purpose.

(b) Applications shall be accompanied by a certificate by a licensed veterinarian approved by the health officer, to the effect that all cows from which any part of such

milk is being obtained are in no way unfit for the production of milk for human consumption. Said certificate shall bear a date not more than six months previous to the date of the application, and at the expiration of six months from the date thereof and of each six months thereafter another similar certificate shall be filed with the health officer to the effect that said cows have again been examined and found not unfit for the production of milk for human consumption.

(c) Inspection by the health officer or his representative of the place or places said milk or other milk product as above enumerated is produced, stored, or handled shall reveal the fact that such milk or milk product is being so produced, stored, or handled in a clean and sanitary manner, and that there is no evidence that any person or object coming into contact with such milk or milk product at any time from its production until its delivery to the ultimate consumer is contaminated by or infected with the germs of any contagious or infectious disease liable to be conveyed by milk or milk product, and that the provisions of this ordinance or of the laws of the State of California regarding the production and handling of milk or milk products are in no instance being or liable to be violated.

SEC. 3. It shall be the duty of each person, firm, or corporation licensed under the provisions of this ordinance to keep an accurate record of all milk delivered, which record shall include the name and address of the customer and the quantity of milk delivered each day, which record shall be open to inspection by the health officer or his representative at all times.

SEC. 4. It shall be the duty of the health officer to inspect or cause to be inspected at intervals to be hereinafter set forth all dairy farms, creameries, or milk depots at which milk or milk products for sale or delivery or exchange in said city is [sic] produced, handled, or stored. The intervals of such inspection shall be determined at the discretion of the health officer: *Provided*, That inspection of such place or places shall be at least once in three months. And upon his discovery at any time of any violation of the provisions of this ordinance or of the laws of the State of California he may, at his discretion, subject to the approval of the city council of said city, revoke the permit of the offender.

SEC. 5. No person or dealer in milk or employee or agent of such dealer in milk or milk products, except such as may sell for consumption upon the premises where sold, shall give, furnish, sell, offer for sale, or deliver within said city any milk, butter-milk, skimmed milk, sour milk, whey, or cream in quantities of less than 1 gallon, unless the same be kept, offered for sale, exposed for sale, sold, or delivered in sanitary, transparent glass bottles or such other receptacle of similar character as is approved by the health officer. Said bottles or receptacles shall be capped immediately after filling the same, which filling and capping shall be done only in a milk house or creamery the sanitary condition of which has been approved by the health officer.

SEC. 6. For the purpose of this ordinance "grade B" milk shall, in addition to the requirements and specifications of such milk, set forth in the laws of the State of California, conform to the following requirements and specifications:

(a) All grade B milk must be pasteurized before being offered for sale except when sold in bulk to the wholesale trade.

(b) It must be kept at a temperature not to exceed 60° F. up to the time of delivery to the pasteurizing plant.

(c) It must be plainly labeled upon the container, in legible characters, in blue ink, "grade B," "raw," or "pasteurized," as the case may be, together with the name of the dealer or producer and the date and hour of pasteurization.

For the purpose of this ordinance "grade A" milk shall, in addition to the requirements and specifications of such milk set forth in the laws of the State of California, conform to the following requirements and specifications:

(a) If pasteurized, it must be rapidly cooled after pasteurization to a temperature not to exceed 50° F., and so maintained until delivered to the ultimate consumer.

(b) It must be plainly labeled upon the container in legible characters in red ink "grade A," "raw," or "pasteurized," as the case may be, together with the name of the dealer or producer.

(c) It must contain at least 3.25 per cent of butter fat.

For the purpose of this ordinance "guaranteed" milk must at all times conform to requirements and specifications for such milk set forth by the laws of the State of California and, in addition, to the following requirements and specifications, which shall be determined by examination at least once each 30 days:

(a) It must contain not more than 100,000 bacteria per cubic centimeter.

(b) It must come from cows free from tuberculosis as determined by tuberculin test, whether sold raw or pasteurized.

(c) It must be plainly labeled upon the container in legible characters, in black ink, "Guaranteed milk," together with the name of the dealer or producer.

SEC. 7. All wagons or conveyances used for the purpose of distributing or delivering milk within the city of Bakersfield shall bear, plainly marked upon the side thereof in legible characters not less than 3 inches high and 1½ inches wide, the permit number under which such milk is being sold or delivered, and the name and address of the dealer.

SEC. 8. The health officer of the city of Bakersfield shall condemn or exclude from sale in the city of Bakersfield any or all milk or cream which is produced in whole or in part on premises to which access, for the purpose of inspection, has been refused the health officer or his assistant. The health officer, or any of his assistants, may seize or confiscate any milk, cream, or other milk products sold, offered for sale, or held with intent to sell within the city of Bakersfield contrary to any section of this ordinance or to any of the provisions of the laws of the State of California covering the production and handling of milk or milk products, and may pour out, color, or denaturize any or all milk, cream, or other milk products so seized, to prevent the use of same for food purposes. The health officer, or any of his assistants, may affix, or cause to be affixed, to any can, receptacle, or vehicle containing any condemned milk, cream, or other milk products a card or tag stating that same has been condemned and the reason therefor. Said card so attached shall be due notice of condemnation. No milk, cream, or other milk products condemned as herein provided shall be used for human food, sold, held, or offered for sale in the city of Bakersfield. The health officer or his assistants shall not be required to take sample of milk or cream which shall show a temperature higher than the allowed temperature specified in this ordinance, but may condemn any or all milk or cream showing a higher temperature than that specified.

SEC. 9. Any person violating any of the provisions of this ordinance shall be punished for the first offense by fine not exceeding \$10 and costs of prosecution, and in default of the payment of any fine or costs the court may imprison such person in the city jail of the city of Bakersfield or the county jail of the county of Kern until such fine is paid, not, however, to exceed 10 days; for a second offense by a fine not exceeding \$50 and costs of prosecution, and in default of the payment of such fine the court may imprison such person in the city or county jail, not, however, to exceed 25 days; and for each subsequent offense by a fine not exceeding \$200 and costs of prosecution, and in default of the payment of such fine the court may imprison such person in the city or county jail, not, however, to exceed 90 days.

SEC. 10. This ordinance shall be in full force and effect 60 days from the date of its passage and publication as required by law, except that the provisions of section 6 shall not become effective until October 1, 1916. All ordinances or parts of ordinances in conflict with the same are hereby repealed.

BAYONNE, N. J.

Milk—Sale of—Maintenance of Dairies within City Prohibited. (Reg. Bd. of H., May 9, 1916.)

SECTION 1. On and after December 31, 1916, no person, persons, corporations, or copartnership shall maintain or carry on the business of a dairy, where cattle are kept for the production of milk for the purpose of sale within the limits of the city of Bayonne.

SEC. 2. Any person, persons, corporations, or copartnership violating this ordinance shall, upon conviction thereof, forfeit and pay a penalty of not less than \$25 for the first offense, and \$25 for each subsequent offense; and each day's continuance shall be deemed a separate offense.

BELLINGHAM, WASH.

Water Supply—Protection of—Appointment, Duties, and Salary of Watershed Patrolman. (Ord. 2734, May 3, 1916.)

SECTION 1. That the mayor of the city of Bellingham be, and hereby is, authorized to appoint a special policeman and in his discretion remove the same. Such policeman shall be known as the watershed patrolman, and shall at the time of qualifying for said appointment, take an oath of office and shall have the powers of a constable under the laws of this State and may arrest with or without warrant any person committing any offense against the purity or cleanliness of the water supply of the city of Bellingham as said offenses may be defined by any ordinance of the city. Such officer shall while on duty wear at all times in plain view a badge bearing the words "City of Bellingham, Watershed Patrolman." He shall perform such general and special patrol and other work necessary for the protection of Lake Whatcom and Lake Padden from pollution as may be directed by the mayor or the board of health of the city of Bellingham. Such patrolman shall receive the sum of \$75 per month, payable monthly out of the water fund of the city of Bellingham, as full compensation for all services so performed.

BERKELEY, CAL.

Garbage, Refuse, and Ashes—Care, Collection, and Disposal—Receptacles. (Ord. 445, N. S., Feb. 2, 1916.)

SECTION 1. Garbage, as the word is made use of in this ordinance, consists of solid or semisolid kitchen refuse subject to decay or putrefaction or in which flies or vermin can breed and live, and market wastes of animal and vegetable matter which has been or was intended to be used as food for man or animal, also dead animals of a weight not to exceed 10 pounds.

Rubbish.—Rubbish, as the word is made use of in this ordinance, consists of refuse largely or wholly combustible, other than foodstuffs, such as paper, clothing, grass, leaves, wood, and sweepings, in quantities no greater than can readily be placed in the regular garbage cans.

Mineral wastes.—Mineral wastes, as the term is made use of in this ordinance, consists of noncombustible refuse, such as plaster, brick, cement, glass, crockery, natural soil, shells, metals, and metal products.

Ashes.—Ashes in quantities not to exceed 5 gallons per week may be classed as rubbish and disposed of according to the provisions of this ordinance therefor while larger quantities shall be classed as mineral wastes.

Tree trimmings.—Tree trimmings, vines, and grass in quantities exceeding the capacity of garbage cans may be classed with mineral wastes for purposes of disposal.

Dead animals.—Dead animals, as the term is made use of in this ordinance, consists of all dead animals or parts thereof (including condemned meats) exceeding 10 pounds in weight and not intended to be used as food.

SEC. 2. *Receptacles for garbage and rubbish.*—Every tenant or occupant of any private dwelling and every keeper of any hotel, restaurant, boarding house, or other building

where meals are furnished and every other person, corporation or association having garbage shall provide and at all times keep in a place easily accessible to the garbage collector and where they will not be a public nuisance or in any degree offensive, water-tight, metallic cans or metal-lined boxes with suitable bales or handles and each having in place a tight-fitting cover that will exclude water, for receiving and holding without spilling or leaking or escape of odor, all the garbage which would ordinarily accumulate on his premises between the times of two successive collections as provided in section 7.

Cans or receptacles for garbage shall each have a capacity of not less than 10 gallons and not to exceed 60 gallons. No can or receptacle for receiving garbage shall be placed or kept on or in any public street, alley, sidewalk, footpath, or any public place whatsoever. Rubbish may be deposited with garbage in garbage cans; or separate receptacles similar to those herein specified for garbage shall be provided for receiving rubbish and protecting it from wind and rain. Receptacles must be provided on each premises of sufficient capacity to hold the rubbish which would ordinarily accumulate in one week's time.

It shall be unlawful to keep or deposit rubbish or garbage on any private grounds, except in cans or receptacles as specified in this section.

Refuse of a liquid nature shall not be deposited with garbage or rubbish. Kitchen refuse collected by licensed collectors must be drained of all moisture and completely wrapped in paper before being placed in the receptacles and the receptacles kept at all times in a neat and sanitary condition.

Rubbish shall be reduced to such size and shape as to be easily and compactly placed in barrels, boxes, or wagons, and no single piece shall exceed 2 feet in its maximum dimension when so packed.

SEC. 3. *Tin cans.*—Separate receptacles shall be provided for tin cans. Tin cans, after being emptied and cleaned of all matter subject to decay, shall be deposited therein for collection and shall at all times be kept separate from garbage and rubbish.

SEC. 4. *Receptacles for mineral wastes.*—It shall be unlawful for any person to deposit mineral wastes in receptacles designed for garbage or rubbish. Any person desiring to have mineral wastes removed from his premises shall provide suitable receptacles therefor and keep such mineral wastes entirely separate from both garbage and rubbish.

SEC. 5. *Removal of garbage and rubbish.*—All garbage or garbage and rubbish shall be collected not less than three times per week from all meat, fish, game, and vegetable markets, hotels, restaurants, boarding houses, hospitals, and such other places as the health officer may order in writing.

Collections shall be made at least once a week from private residences where the weekly accumulation does not ordinarily exceed 20 gallons, and at least semi-weekly from all places not herein otherwise specified.

Rates for collection.—For the services of collection and disposition of garbage and rubbish the tenant or occupant or proprietor of each residence, building, shop, or storeroom on which garbage and rubbish accumulates, shall be charged by the collector; rates not to exceed the following schedules:

Cost per month for removal of garbage and rubbish.

Quantity.	Collections per week.			
	1	2	3	6
20 gallons or less (2½ cubic feet).....	\$0.35	\$0.70	\$1.00	\$2.00
20 to 30 gallon can (2½ cubic feet).....	.45	.90	1.25	2.50
30 to 40 gallon can (3½ to 5 cubic feet).....	.55	1.10	1.50	3.00
40 to 50 gallon can (5 cubic feet).....	.65	1.35	1.80	3.60
50 to 60 gallon can (6½ cubic feet).....	.75	1.50	2.25	4.50

These prices shall include the removal of the regular accumulation of tin cans.

For removal of mineral wastes, manure, yard and street cleanings, one-fourth cent per pound.

SEC. 6. *Garbage removal.*—All garbage shall be removed and carried through the streets of the city in carts or wagons in water-tight cans, or in carts or wagons having metallic or metal lined beds and with proper covers, so that the garbage shall not be offensive, and the garbage and rubbish shall be so loaded that none of it shall fall, drip, or spill to the ground, and shall be protected from wind and rain.

Separate compartments shall be provided in the garbage wagons for tin cans. Tin cans shall be kept separate from garbage and rubbish and shall be dumped at the incinerator as directed by the Superintendent in charge.

Wagons.—Every cart or wagon shall be kept clean on the inside and both clean and well painted on the outside, and in a prominent place on each cart or wagon on each side thereof shall be displayed the number issued by the city for that cart or wagon.

SEC. 7. *Delivery to incinerator.*—Garbage and rubbish shall be delivered by the collectors at the municipal incinerator at such time during the day as may be determined by the superintendent of the incinerator.

It shall be unlawful for anyone to dump garbage or rubbish within the city limits, except at the municipal incinerator as herein specified.

All garbage and rubbish shall be kept as dry as possible during all the time of accumulation, collection, and delivery at the incinerator.

Permit necessary.—It shall be unlawful for any person to engage in the business of collecting garbage without having first obtained from the city council a permit for conducting said business; said permit shall cover a period of one year unless revoked, and shall not be transferable, except by permission of the council of the city of Berkeley.

SEC. 8. *Incinerating fee.*—For the services of destruction and disposal of garbage and rubbish the collector thereof shall pay a monthly fee of \$15 for each wagon. Payment of this fee shall be made on or before the first day of each month to the treasurer of the city of Berkeley, who shall issue a receipt therefor which shall be the permit for disposal privileges at the municipal incinerator during the calendar month following the date of such receipt.

SEC. 9. *Mineral wastes.*—Mineral wastes shall be kept separate from garbage and rubbish during collection and disposal, and shall be dumped in such place and in such manner as shall be approved by the commissioner of public works.

SEC. 10. *Health officer judge of sufficiency and sanitation.*—The health officer shall have the power to establish rules and regulations governing keeping, collection, removal, and disposition of garbage, rubbish, and dead animals not inconsistent with the provisions of this ordinance.

The health officer shall be the judge of the sufficiency and sanitation of all garbage and rubbish containers and carriers.

Council as arbiter.—The council of the city of Berkeley shall be the arbiters of any dispute between collectors and patrons concerning all provisions of this ordinance, except those in which the health officer is specified as judge.

SEC. 11. *Violation of provisions of ordinance.*—Any violation of any provision of this ordinance shall be punishable by a fine of not less than \$10 and not more than \$100 for each offense. The judgment imposing the fine shall, as an alternative to such fine, impose imprisonment in the county jail of Alameda County until such fine is satisfied in the manner and for the time and rate provided by law.

SEC. 12. Sections 1 and 2 of ordinance No. 523-A and ordinance No. 84 (N. S.) are hereby repealed, but nothing in this ordinance shall be construed to repeal ordinance No. 352 (N. S.) as amended by ordinance No. 364 (N. S.) providing for the licensing of garbage wagons.

Department of Health—Organization, Powers, and Duties. (Ord. 458, N. S., May 12, 1916.)

SECTION 1. A department of the city government to be known and designated as the health department is hereby created, and it shall be constituted as hereinafter set forth, and vested with the powers and duties herein enumerated.

SEC. 2. The health department shall consist of the health officer, an advisory board of health, city veterinarian, milk inspector, food inspector, sanitary inspector, bacteriologist, chemist, secretary, and such employees as the council shall, from time to time, deem necessary to protect the health of the citizens and enforce the health regulations.

SEC. 3. The health department shall be subject to the control of the council and under the general supervision of the commissioner of public health and safety.

SEC. 4. The health officer shall be the chief executive officer of the health department. He must be either a graduate of medicine experienced in public health or the holder of a degree in public health from a recognized institution of learning. He shall be appointed by the council of the city of Berkeley, and shall hold office at its pleasure. He shall have control over all the activities of the department and of its subordinate officers. He shall act as chairman of the advisory board of health, and may convene said board at his pleasure. Whenever in his judgment the same may be necessary or proper, he shall have authority to require officers and employees of the health department to perform duties in two or more spheres of activity, and he shall have authority to make and enforce rules and regulations for the efficient and economical conduct of the business of the department. He shall prepare an annual estimate of the amount of money required from the city for the administration of the health department for each ensuing year, specifying in detail the proposed disposition thereof. He shall submit an annual report of the work of the health department. He shall conduct a monthly meeting of his department, at which time the subordinate officers shall present their reports. He shall be required to swear to all complaints for violations of ordinances regarding matters coming under the supervision of the health department. He shall have administrative control of hospital service, free dispensaries, measures for the reduction of infant mortality and communicable diseases, and for the prevention of tuberculosis, and such other duties as properly come under medical inspection.

SEC. 5. The advisory board of health shall consist of five members, to wit, the mayor, the health officer, and three other persons who shall be appointed by the council and shall hold office at its pleasure, and at least two of whom shall be experienced in public health. It shall be the duty of the advisory board of health to attend all the monthly meetings of the health department, to attend citation proceedings conducted by the health officer, and to suggest appropriate legislation to the health officer for presentation to the council, and in all matters of public health to furnish advice to the health officer.

SEC. 6. The city veterinarian, acting under the control of the health officer, shall have charge of the food inspection. He shall be appointed by the council on recommendation of the health officer, and shall hold office at its pleasure. He shall be a graduate of a recognized college having a course of not less than three years leading to the degree of veterinary medicine. He shall have supervision, under control of the health officer, of the inspection of (1) dairy herds, animals for slaughter or slaughtered animals suspected of rabies or other communicable diseases; (2) the sanitation of dairies, milk shops, slaughterhouses, meat shops, vegetable markets, vegetable gardens, provision shops, bakeries, delicatessen, or other places furnishing food supplies to the city of Berkeley, and such duties pertaining thereto as may be assigned to him by the health officer.

SEC. 7. The milk inspector shall be appointed by the council on recommendation of the health officer, and shall hold office at its pleasure. His qualifications shall be the same as those of the city veterinarian. He shall inspect and score all dairies and milk shops, and shall procure and deliver to the city chemist at least once monthly samples of milk from each holder of a milk permit, in accordance with the requirements of the milk ordinance, or as directed by the health officer or city veterinarian.

SEC. 8. The food inspector shall be appointed by the council on recommendation of the health officer, and shall hold office at its pleasure. He shall have had experience in food inspection. He shall be required to make inspections, examinations, and scorings of all places where food is manufactured, sold, or exposed for sale, other than those mentioned in section 7, together with such other duties as may be assigned to him by the health officer or city veterinarian.

SEC. 9. The sanitary inspector shall be appointed by the council on recommendation of the health officer, and shall hold office at its pleasure. He shall furnish evidence of training in sanitary inspection. He shall have charge of the inspection of the sanitation of factories, stores, tenements, stables, poultry yards, and all premises and establishments not provided for under sections 6, 7, and 8, together with investigation of conditions offensive to the senses or dangerous to public health. He shall be *ex officio* garbage inspector. He shall report directly to the health officer.

SEC. 10. The city bacteriologist shall be appointed by the council on recommendation of the health officer and shall hold office at its pleasure. It shall be the duty of the city bacteriologist to make bacteriological examinations for the city of Berkeley and for any of its municipal departments. He shall have full charge of the bacteriological laboratory, and shall be responsible to the health officer for the conduct thereof. He shall make written reports to the health officer at each of the monthly meetings of the health department, of the work and proceedings in the bacteriological laboratory for the preceding month, and shall make such other reports as may be required by the health officer.

SEC. 11. The city chemist shall be appointed by the council on recommendation of the health officer, and shall hold office at its pleasure. It shall be the duty of the city chemist to make chemical examinations for the city of Berkeley, and for any of its municipal departments when requested. He shall have full charge of the chemical laboratory and shall be responsible to the health officer for the conduct thereof. He shall make written reports to the health officer at each of the monthly meetings of the health department of the work and proceedings of the chemical laboratory for the preceding month and shall make such other reports as shall be required by the health officer.

SEC. 12. The secretary shall be appointed by the council on recommendation of the health officer, and shall hold office at its pleasure. Said secretary shall be an expert stenographer and shall act as secretary to the health officer and to the advisory board of health. He shall conduct the correspondence of the health department. He shall record the vital statistics, secure and file records and reports from the various officers of the health department, maintain a register of licensed plumbers, prepare a monthly statistical report of the workings of the entire health department, and perform such other duties as may be assigned to him by the health officer.

SEC. 13. The council may, if in the judgment of the health officer it is desirable, appoint one and the same person to hold one or more of the subordinate offices herein provided for. When one person shall fill two or more of the offices herein provided for, he shall act in a separate and distinct capacity in each of said offices.

SEC. 14. All powers and duties heretofore vested in the board of health by existing ordinances are hereby transferred to the health officer.

SEC. 15. Ordinances Nos. 27 (N. S.), 28 (N. S.), 220 (N. S.), and all ordinances and parts of ordinances in conflict herewith, are hereby repealed.